trends in education

Spring issue

1978 1

Teaching History

Science Education

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Department of Education and Science
HMSO 60p net Annual subscription £2·88 including postage

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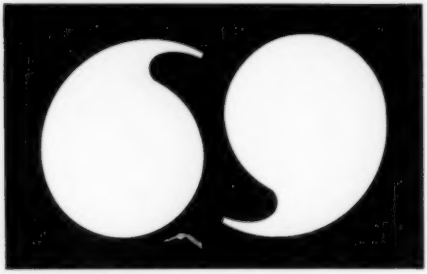

Talking Points

Manners makyth man

Many years ago, for reasons that need not detain us, I fell down the parcel chute at the Central GPO in Glasgow. As this was a new experience for me, I did not know what destination I was making for, how rapidly I would get there, or how much damage I was likely to suffer on the way down. I remember taking some comfort from the notion that if the parcels survived it so should I – though, as it was Christmas, my faith in the soundness of this idea was probably a little misplaced.

I landed, quite gently as it turned out, on the cobbles of a loading bay. As I did not quite know how to explain my presence there to the assembled crowd of drivers – who, anyway, looked as if they couldn't quite believe what they saw – I wished them all a very good evening and wandered off into the night.

What was it, you may well ask, in my early education and upbringing that made my immediate and only response to this rather unusual situation a gesture of politeness that was almost a conditioned reflex? What was it about that very early nurture that still makes me feel uncomfortable when I find myself walking beside a woman companion on the inside of the pavement? In these carefree days of 1978, I no longer need to keep my sword arm free or, more plausibly perhaps, protect their jeans from the mud thrown up by hackney carriages and hansom cabs. Yet, like a ball in a pinball machine, I am now compelled to dodge from one side of my companion to the other whenever we happen to cross the road.

Appropriately enough, I am asking this question in a year when we are celebrating the sixtieth anniversary of the Act of 1918 that first gave women the vote. It has been said with some justice that the liberation of women probably owes as much to the typewriter, tinned food, and the Pill as it does to the Act itself. Be that as it may, what your desperate and desperately male executive editor fervently hopes is that the liberation of women will also result, as it should, in the liberation of men from such outmoded conventions.

Plus ça change . . .

In this, the first issue of 1978, we are making a few changes and introducing some new features. The changes are, as readers will see, fairly minor. The most obvious one is in the design of the cover. It will be our third change of cover since October 1973, but as we used virtually the same one for our first thirty-two issues, we feel that we have been almost conservative in our approach to design – too conservative for some of our readers and too radical for others, so we may have managed to strike just the right balance over the years.

The other changes are in the design and layout of the inside pages. We hope that they will make the journal easier to read and a little easier on the eye.

We are introducing two new features, and these will appear in every issue from now on. The international page will be written by specialists, some of whom will come from the Department itself and some from outside. It will deal with aspects of education abroad, particularly those that have some bearing on practice and experience in this country. The items included in the statistics page have been selected to answer the statistical questions most people are likely to ask. They will be updated from issue to issue.

We shall also be publishing regularly articles from the DES and from other government departments to give readers some idea of range of the contribution central government makes to education and of the different forms that contribution can take. The article in this issue on the work of the Service Children's Education Authority is the first of these.

History and history teaching

History, like English and mathematics, is one of the subjects that traditionally appear on the school timetable. Most pupils are expected to study it fairly systematically for at least the first three years of their secondary schooling. But why history? What claim does it have on a pupil's time? How can history teachers justify it and the hours spent on it? Is it useful? Can we learn from it? Can our knowledge of the past put us in a better position to face the future? Too often the historian's answer to the question, Why history?, is a half-hearted shrug of the shoulders and an apologetic, Well, why not?

This, John Slater argues, is not good enough. There are excellent reasons for studying history, and history teachers ought not to feel that they have to apologize for their subject. John West and Denis Shemilt discuss what level of understanding children can reach at different stages; Roger Hennessey puts forward reasons for a greater emphasis on the history of science and technology; and Ted O'Connor and Richard Tames suggest an approach to the teaching of history in a Britain that is becoming increasingly multicultural.

These articles present a cogent and, we believe, a compelling case for the teaching of history in schools.

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Why history?

John Slater
Staff Inspector with special responsibility for history

To many teachers, and to many of their pupils, the question 'Why history?' would seem odd. They know that most children have a natural curiosity about the activities of human beings in the past. Comics, television programmes, and, for centuries, many children's games, are evidence of this. The interest of adults is equally apparent: the sale of paperback books, borrowings from public libraries, enrolment in adult education classes, visits to country houses and historic sites, and the popularity of television programmes dealing with the past all bear effective witness to a live and established interest in history. It is one task of teachers of history, whether it is considered as a separate discipline, or in relationship with others, simply to enrich and encourage this interest. It is an interest related to a search for our own identity, which depends in part on the knowledge and understanding both of our own individual origins and of the development of those groups – political, religious, national, ethnic, and cultural – to

which we are all attached. We become even more sharply aware of our own identity when we are able to compare it with that of others who share with us a common humanity, but who have experienced and shaped it in different cultural or chronological circumstances.

What is it about?

Put at its simplest, history remains the one discipline in the curriculum that is concerned with the behaviour of human beings who have actually lived, or indeed who may still be alive. It is not only the responsibility of historians to assert this with confidence, but for those who are content to see a curriculum without it to justify its absence.

It should not, of course, confine itself to the actions of the famous dead. An historian is interested in the doings of emperors and prime ministers, of generals, and of bishops and revolutionary leaders, but he must also be concerned with engineers and craftsmen, architects and scientists, trade union leaders, factory and farm workers, private soldiers, school teachers and their pupils, and our own parents and grandparents. An historian is also interested in origins, in causal connexions, and, above all, in change. Thus he must be concerned with events in sequence. Lastly, he has an interest in human intent and so, unavoidably, with some evaluation of human success and failure. This means that ultimately the historian is concerned not only with the communication of tested facts but also with the making of informed judgements.

Historians are concerned with organizing and communicating their interest. What probably gripped most of us by the arm when we were young about the past was that it was a good story. It must never cease to be that. Any historian, whether he be a 9-year-old or a graduate, is trying to make some sense out of the actions of other people in sequence by turning them into a narrative. Narrative lies at the heart of the subject. It results from the selection and interpretation of evidence distilled by a sensitive imagination. It is not just plot: narrative is also a description of the events on which the story is based and an explanation of the actions of its human characters.

A sense of history

This can be put in another way. All students of the past should expect to acquire certain attitudes, what we might call a *sense of history*. How do we recognize its existence?

First, by *a concern for evidence*: a recognition that all statements about people depend inescapably on evidence. By evidence we do not mean documents only; we mean the landscape and the buildings near the school; we mean artefacts and maps; we mean pictures, both still and moving; and we mean the memories of people still alive. Evidence is never complete, and our historical statements based on it will always be tentative and provisional. It may reveal a range of contrasting, even contradictory, points of view.

Second, there is *an awareness of continuity and change*, an appreciation that the past is different, but although the past *is* different, we still have much in common with human beings who lived in it. This, in turn, is related to an understanding that the rate of change is not constant and that recent change is characterized by its unprecedented and bewildering acceleration.

Third, there is *an interest in cause*. This means not just the 'what' and 'when' questions but also the 'why' and 'how'. Even younger pupils can begin to appreciate that historical explanation is problematical, sometimes controversial, and always provisional. They begin to realize that good and bad kings, heroes and heroines, are often oversimplifications imposed on the past by posterity. They realize that to

be on the side of Harold the Saxon, or William the Norman, is matter for discussion, not assertion; and that cowboys and Indians cannot easily be associated with 'us' and 'them'. A mind with a sense of history sees through simple explanations of human behaviour and accepts doubt, qualification, and diversity. The historian's sympathies may be real but they are often untidily distributed. 'The historian's duty is to reveal the complexities of human behaviour and the strangeness of events', as Professor Plumb reminds us.*

Finally, a sense of history requires *empathy*, the ability to enter into some informed identification with the predicaments and points of view of other people. Thus, if historical statements are founded on evidence, their interpretation and understanding depend equally on imagination. A primary school headmaster in the Black Country, who made notable use of primary source material with his pupils in an attempt to understand the conditions of life of children in the early part of the last century, was asked what he was trying to achieve. His reply was memorable and simple: 'I want to make them weep'.

Questions such as 'How do we know you are telling us the truth?', 'Why should I believe that?', 'By what right can I say this?' are all crucial historical questions depending on evidence. Questions such as 'What was it really like in the last war?', 'Weren't they very brave, or very silly, or very cruel?', 'What would I have done?' are also important historical questions which relate to evidence but depend on imagination. They are questions that contribute to the development of an informed and responsible scepticism. They are all questions of social importance as well.

In many schools history ought to be a more elaborate discipline than it has often been in the past. A subject like 'traditional' history, in which progress is little more than the acquisition of more and more knowledge, and whose principal assessment technique is the testing of factual recall, need not set much store by evidence or imagination. Increasingly, however, schemes of work in schools attempt to relate their content to increasingly demanding skills, in step with developing abilities of pupils, and therefore with the understanding of increasingly complex concepts. This is a word used frequently by many historians, so we must say something about it. At the simplest level *concepts* are the technical terms associated with any discipline. For the historian they include *democracy, revolution, war, nationalism, power, authority, welfare, civilization, culture,* and so on. They are abstract words identifying a fundamental and shared characteristic among a number of contrasted and distinct circumstances. They are instruments of communication and the means by which we can order and categorize our knowledge. But they are also instruments of analysis and are thus considerably more than mere glossaries. How useful is it, for example, to apply the term *revolution* to France in 1789, Russia in 1917, England in 1688, and to industrial development in England between 1770 and 1820? Is *imperialism* equally applicable to British policy in nineteenth century Africa, to the United States policy of Manifest Destiny, and to Soviet policy in Eastern Europe after 1945? What is *democracy?* Is social democracy the same as parliamentary democracy? Is it appropriate to apply it to the people's democracies in Eastern Europe or to a one-party democracy in the third world? A study of the industrial revolution might help to distinguish between the concepts of *progress* and *improvement*. It might help to highlight certain features of the Reformation if it were decided that its study could clarify the distinction

* Plumb, J. H. *The Death of the Past*. London: Macmillan, 1969.

between *power* and *authority*. The study of European expansion in Africa and Asia might have, among its objects, the understanding of such terms as *colonialism, imperialism, culture,* and *civilization*. Which concepts are identified and studied will depend upon the periods and themes within a syllabus and of the emphasis given to them. But two concepts, inescapable and fundamental to all historical study, are those of *cause* and *change*.

What is history for?

To describe a subject is not yet to justify its presence in the curriculum. It is not only to pupils and their teachers that history in the school must be justified, nor to head teachers and chief education officers, but also to parents and employers – the people whom we loosely term 'society', and who pay for its presence.

A. History and Language

In 1975 a report of fundamental importance in the teaching of history was published. It was called *A Language for Life* and known as the 'Bullock Report'. Historical skills offer a tremendous opportunity to use and to develop language in a variety of circumstances; to argue cases, to interview, to play roles, to re-enact situations imaginatively, to discuss, to marshall evidence, to detect bias and emotional content, and many others. Using concepts means not only the acquisition of a technical vocabulary, but the application of it to a series of economic, social and political circumstances. The understanding of statements and the appreciation of the effectiveness of arguments depends not only on their intellectual content but on our understanding of their particular use of vocabulary and figurative language. Narrative and argument depend on a skilled use of tenses and an understanding of conjunctions. Language too has its own history; meaning often lies in origins, and the thoughts of men in other ages can be understood only if the change in meaning of words is appreciated, while the writings of the past, of great historians and in good historical novels, can serve as exemplars. The past speaks to us in language; we in our turn react to it with our language.

B. The world of work

It would, of course, be foolish to claim that history is a subject of much direct vocational value to many, but it would be unnecessarily timid to deny its contribution to the world of work. A subject that is concerned with the nature of change, the study of contemporary problems in their historical context, the encouragement of a degree of empathy, and the study of the diversity of individuals and groups, and contributes to our understanding of historical, political, social and economic concepts, has an obvious contribution to make to the world of work. It is also important to remind ourselves that many history graduates are still employed in commerce and in industry. '. . . British industry is employing thousands of history and other arts graduates profitably, in spite of the supposed uselessness of their degree subjects.'*

C. History and moral education

The growth of moral awareness is partly an empathetic process in that it depends upon the ability to develop some sympathetic understanding and compassionate identification with the predicaments and attitudes of other people. Enough has been said so far to make it clear that this is a central part of historical understanding. Part of religious and moral education is also self-knowledge. R. G. Collingwood wrote: 'Knowing yourself means knowing, first, what it is to be a man; secondly, knowing what it is to be the kind of man you are; thirdly, knowing what it is to

* Michael Crick, a first year PPE student at New College, Oxford, in an article published in *The New Statesman*, 5 November 1976.

be the man *you* are and nobody else is. Knowing yourself means knowing what you can do; since nobody knows what he can do until he tried, the only clue to what man can do is what man has done. The value of history, then, is that it teaches us what man has done and thus what man is.'* And, we might add, offers us important clues to what he might become.

Every historical event has a number of possible moral interpretations, and our reaction to it is inescapably subjective. We unavoidably, if covertly, praise or deplore as we come across a death, a victory, or a reform; our pupils will openly and bluntly make *their* judgements. Moral judgements lurk in the very vocabulary of history: *execution, reformation, reform, conqueror, imperialism, progress, democracy, crusade.* Our own relationship to the past is inescapably subjective; it cannot be the task of history to eliminate this; its task is to increase the knowledge and the understanding on which we base our subjective reactions. What remains crucial, in objective and absolute terms, is the inescapable link between statements about people and evidence, which can only be properly understood in its historical context. If, ultimately, history is not about the transference of agreed facts but about the making of informed judgements, it must be a central part of our moral education.

But morality has its own history. This is not to deny the existence of moral absolutes, be they Marxist or Christian, Hindu or humanist, nor are we suggesting that history is the story of gradually increasing enlightenment and tolerance. Nonetheless, attitudes to minorities, to dissent, to punishment, to children, and to black people, for example, have varied through time and have always been related to a variety of social, economic and political pressures. If we are to understand and to define our own moral attitudes, they too must be placed in this historical context.

D. History and democracy

Democracy as we experience it in this country today not only accepts but welcomes the existence of diversity and differences of opinion. It assumes that the resolution of these differences is peaceful and depends on the exercise of informed choice. The past reminds us not only of the alternatives to our society but of the variety of opinions within it, and of their cause and evolution through time. This does not mean that historians are in the business of prediction; they can, however, be in the business of more informed anticipation. A knowledge of society is given some pattern by its concepts. These are not only those associated with political ideas such as democracy itself but with others such as *communism, despotism, aristocracy,* and *nationalism* and those associated with political processes such as *election, constitution, parliament, pressure groups, revolution,* and *debate.*

But historians can no longer limit themselves to political, social and diplomatic problems. We live now in a highly complex economic society. The historians' concepts must now include the understanding of terms such as *wealth, labour, slump, trade, investment, profit* and *loss.* Similarly, we must be much more aware of the impact of technology and industrialization on political power and the challenges to it, on personal freedom, on international relations, and on the growth of great cities, all central features of the contemporary world. History that ignores industry, technology and urban living is unlikely to be able to put many contemporary problems into a helpful historical context. But the historian with his concern for evidence about people

* Collingwood, R. G. *The Idea of History.* London: Oxford University Press, 1946.

must not only read it, he must assess it critically; he reads and listens and observes with a degree of informed scepticism. 'How do I know this is true?' is not only a fundamental historical question, it is also a necessary assertion of intellectual independence in a democratic society. It is a question unlikely to be welcome in a closed or authoritarian one. Just as unwelcome is the imaginative attempt to appreciate the points of view, predicaments and circumstances of people other than ourselves – that other vitally important requirement of the historical mind. The exercise of responsible choice depends not only on appreciating its effect upon ourselves but also on its effect on the lives of other people. Historians should assert with confidence that their knowledge, their interest in cause, concern for evidence, and understanding of what it is to be like somebody other than ourselves is a crucial strand in the maintenance of a democratic society.

E. History and leisure

It is too limited a view of the use of history, and indeed of many other subjects in the curriculum, to assess its value only in terms of activities outside and beyond itself. Our reading, our visits to country houses, castles, and archaeological sites, our enrolment in adult education classes, the time we spend in museums and art galleries, and the television programmes we watch are all justifiable ends in themselves. History excites children for its own sake and, if the enthusiasm is fed and not dampened, it is capable of enriching their leisure not only during their week-ends and school holidays, but throughout their adult lives.

We live in a society in which we communicate, work, vote, enjoy leisure, and take social and personal decisions in a complex and economic and technological world. Historians can argue with confidence that a sense of history is a crucial part of all these activities.

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Young children's awareness of the past

John West
Chief Inspector of Schools, Dudley

It has been evident for at least the last two decades that the prospect of teaching history in English primary or middle schools creates a sense of doubt and some confusion in many teachers' minds. In first schools, the subject is now virtually non-existent. The most clear-cut evidence of this trend can be seen in the absence from many head teachers' timetables and schemes of work, as from many teachers' lesson plans, of any reference to history in its own right or, indeed, in any form.

In the best primary school history classes, there has often been the compensation of a genuine belief in the value of evidence and the quest for truth in place of given 'facts'; of empathy rather than of memory; of the relevance of the past to the place and time in which the children find themselves. Moreover, there has been the development of considerable skills in the organization of data for a project. In rare cases, documents have been computerized.

On the other hand, a questionnaire returned in 1976 by the head teachers of sixty-eight primary, junior and middle schools in one West Midlands district revealed that 83 per cent of the head teachers 'would hope to see some clarification of the aims and methods of history teaching' for the children in their schools. Furthermore, 86 per cent agreed that 'there are certain skills, attitudes and concepts about the past that require special attention' during the primary school phase. Even so, 76 per cent of the same sample felt obliged to acknowledge a conscientious belief that from 7 to 11 years of age the integration of historical material with other subject matter was both necessary and desirable, rather than isolating history for specialized attention. This somewhat equivocal view appears to be typical of the dilemma of many primary school teachers. Any teaching about the past that is not incidental to the current project is difficult or suspect. Not only is it evident that little history is taught in primary schools, many teachers are now unsure what history is, or could be, for children younger than 11. There are adequate working definitions of what is understood to be primary school French, modern mathematics or Nuffield Science 5–13, but the problem of arriving at a working definition in history is often set aside as incapable of having a desirable academic solution.

This omission is usually justified by the ready assumption that 'Young children have no concept of time' and that 'Historical ideas are too abstract and formal for comprehension by any child before adolescence'. It is difficult to understand by what process of logic reading, mathematics, linguistic skills and science are held to be essential, though difficult, from the age of 5, but history at the same age is considered to be inessential simply *because* it is difficult.

Recent research

Views of this kind would certainly appear to be justified by the evidence of the somewhat limited research that has been published in the field of children's learning about the past. However, more recent work in the classroom suggests that effective skills of verbal reasoning and vocabulary, and of number and calculation, are sufficiently well-formed at 7 or 8 years of age, if not earlier, for progress to be made with children's understanding of time past. More, the essential *attitudes* of curiosity about the past, of empathy with older generations and of the critical questioning of evidence in well-formed terms of 'true and false', if not about 'cause and effect', can be demonstrated as coming naturally to the average child during his infancy. Recent practice by inspired and skilful infant teachers should persuade us that even 7 years of age is unnecessarily late to begin to develop young children's awareness of the meaning of 'Long, long ago' and 'Once upon a time'. It may very well be that it is time for the more optimistic results of classroom practice to be heeded, despite the more disparaging view of 'research'.

The growing awareness that primary school children of average and above-average ability are capable of sorting well-selected 'time cues' into a reasonable order was adequately confirmed during a four-year experimental feasibility test that was carried out with small groups of children aged 6 years and 10 plus in six Midlands schools from 1974 to 1977. This investigation now continues with a trial phase in fifteen pilot primary and middle schools in Dudley, its results being checked and compared with those of a similar group of fifteen control schools. These willing volunteers thus offer a sample of more than 1,200 children for a period of four years' investigation and tests.

The pilot group now follows a prescribed syllabus of stories,

discussion of museum objects and investigation of picture-slides that will be described in the course of this article. Briefly, they are concerned more with 'a sense of evidence of the past' than with 'history' as such. The essential key concepts of our project are held to be the perception of *evidence*, of *authenticity*, of *age* and, in relation to the last, the ideas of *sequence*, of *difference* and of *change*. This curriculum has been devised to last for the four years (7–11) in fifteen schools. Meanwhile, a matched control group of similar size and similar characteristics is following no other curriculum than that of their normal primary school work, which may or may not include 'history' in some form or other. Both groups are tested at various intervals. The syllabus of the pilot group is described below, as are the tests used with both groups.

Evidence has been taken to mean, in the earliest stage with 7-year-olds, the experience of handling museum objects. Examples are selected from an available central collection of about a hundred items. A set of medals from the 1914–18 War, an antique phonograph, a group of paleolithic stone tools, a commemorative picture of Queen Victoria, an original medieval charter, a model of an eighteenth-century man-of-war, a replica of the Roman penny to be 'rendered unto Caesar', a child's sampler of 1817, are but a few from the central collection. In response, the children have brought in their own family relics – medals, family photographs, old newspapers and books, Victorian Jubilee mementoes, nailmakers' tools and dozens more, enough to use year after year in each class throughout the project. A convincing example of the 7-year-olds' understanding of the objects was their ability not only to set the prehistoric flint tools into a correct time sequence but also to equate them with a similar set of modern tools, knife for knife, axe for axe, and hammer for hammer.

Given a set of simple criteria for the teachers to check – for *vocabulary* a set of possible 'key words' (flint, axe, prehistoric, stone age: Infants); the *identity* of each object ('It's a prehistoric hammer': Infants); and evidence of associated *knowledge* ('These people made cave paintings': Middle School); specific incidents of close *observation* (looking at museum reference numbers inked on to the stone: 'These have all been in exhibitions. They all have the same 'top' numbers; they have the same classification, but they have different 'ringed numbers': Middle) and simple *deduction* ('That hole might be to put a stick in, for the handle': Middle); or best of all, a real feeling of *empathy* and understanding ('It fits nicely into your hand for throwing or hitting' – 'They were talented people' – 'They're violent weapons for killing . . . destructive' – 'They would fight for survival and kill for survival': Middle). Finally, if possible, *time sense* was sought ('This is difficult, about a million years old' . . . older than a million . . . from the Stone Age: Infants).

The middle school groups' 'decoding' of an illegible fourteenth-century charter of the Black Prince was particularly encouraging; there was instantaneous *identification:* 'It's a scroll, a letter in Latin, with a wax stamp: the King's orders: a Latin message': immediate association with similar areas of *knowledge:* 'It's something to do with heraldry . . . William the Conqueror had a lot of castles built'; careful *observation:* 'It's engraved on the wax . . . there's something . . . 'Edward I: I think . . . it looks like L . . . C . . . I . . . G . . . L . . . L': and imaginative deduction: 'It might be a message about a war . . . about money . . . probably before a war when they got their armies together. It might have been used in telling people about the tax.' In general, there was sympathetic *response:* 'You wish you could read

Latin; it makes you curious – puzzled'. This was the typical range of the children's response.

Methods

It has been evident throughout these lessons that the children's ability to handle an old object, to feel it, to heft it in the hand or turn it about and about on the table, has been a potent stimulus to ideas, vocabulary and discussion. Certainly, the air of mystery, of a puzzle to be solved, a message to be decoded, has produced an unexpectedly high level of close observation and deduction. Investigation has been all the more vocal without the supervision of a teacher. Indeed, in any case where a final answer was inadvertently given by the teacher, this has tended to thwart and end the children's own efforts: the real benefits of trial and error have been evident. The teacher's experience was best directed to a final 'rounding-up' session with all groups combined in a class. As the feasibility trials showed, it seems evident that *powers of observation* are high at 6–8 years and that the *power of deduction* is at a peak at 10–11 years of age. A set of 1914–18 medals and a Defence Medal for 1939–45 revealed to the middle school group a soldier who was young in the First War, middle-aged in the Second War and is now either aged or dead. From the rims of the earlier medals, the recipient's name was found with his regimental number and, as a result of this coincidence, presumed to be not the author but his father, now dead.* From 6 to 11 years, both age groups shared a high degree of empathy and curiosity about the past, both recent and remote. The 10-year-olds, on a picture postcard from Flanders: 'That one is very upsetting, wishing there wasn't a war . . . wishing he would come back . . . war is shocking and destructive . . . a lady sending off a letter and never getting a reply or she gets a postcard saying he's dead or reads it in the newspaper – the shock'.

The devising of tests that can objectively measure these attitudes and concepts by means of carefully selected criteria is a difficult and fallible endeavour. The monitoring and structure of children's unsupervised group discussions also poses interesting problems, similar to the infant schools' need to monitor 'play with a purpose' in the Wendy house or in other role-playing situations.

Throughout this exercise, the significance of the peer group discussion, monitored and recapitulated, though not necessarily supervised by the class teacher, is taken as essential to the development of the children's linguistic skills and their powers of deduction. Teachers involved in the project have already admitted to some surprise at the children's abilities, as revealed in their responses to what might have been imagined to become a difficult, formless exercise. 'They have enjoyed this part of our work very much and have made some very good deductions regarding the age and use of objects. The group discussions were carried out in a sensible and orderly manner.' 'These [museum objects] have proved to be invaluable: the children now look for clues, eg dates and the material the object is made from, to give them a dating power . . .' – 'These were very useful: towards the end of the year the children were gaining some skill in handling and placing in some sort of time scale . . .' – 'The children's vocabulary has improved – imaginative and interesting ideas as to what the object could be . . .' – '. . . the children have become very astute in recognition and dating. Several children have developed a procedure for examining objects and have produced very accurate results . . . the discussion is very good for vocabulary . . .' – 'I had some good group leaders chosen

* i.e. 44321 Pte. A. T. West.

for their ability to observe and discuss well. They encouraged conversation between reluctant pupils. . . .'

The peer group discussions have been prompted by a set of cue cards. These, sixteen in all, establish a weekly pattern or set of similar choices of question – 'What is it?' – 'What is it made of?' – 'How old is it?' – 'What was it used for?' – 'Is it a real one?' 'A copy?' 'A fake?' These cards enable an 8-year-old group leader, with a sympathetic teacher, to conduct his own discussions with a group of classmates.

During the first year (1977–78) of the extended project, stories from the past were added to our store of source material. These, selected by the project organizer and the teachers, have usually been specially chosen for their high level of primary evidence and first-hand authenticity, if possible, as eye-witness accounts. There has, however, been room for the addition of attractive secondary sources – ballads and songs, fables and legends. Our anthology now includes more than 150 choices containing extracts from the Bible, Froissart, the Just So Stories, and first-hand reminiscences of local boys who grew up in 1902. Macaulay, Kipling, Ordericus Vitalis, Herodotus, Newbolt and Tennyson, all make their contribution.

The weekly story period – the story is always told or read aloud – follows the pattern of discussion set by the objects as evidence. Using a set of prepared prompt cards – 'Who is the narrator?' – 'What is his viewpoint?' – 'Was he an eye-witness?' – 'Does he stick closely to the facts?' – 'Does the narrator exaggerate?' – 'Could this story happen today?' – 'Do you believe the story?' – a discussion of evidence, of 'facts', of bias or exaggeration, of true and false, becomes inevitable.

In several cases the story and an object coincide, as, for example, in the story of 'My Father's War Medals'; 'The Black Prince at Crécy' matches his Charter of 1364; a handful of hand-made nails and a Black Countryman's story of the family's kitchen forge; story and object become one.

The teacher's evaluations speak equally highly of the value of the story period: 'To begin with, the children did not seem to respond to the stories, but as we progressed they grew more interested and observant. The questions were answered more thoughtfully and accurately.' – 'The stories have improved the children's vocabulary in describing various parts. They have improved the children's listening powers, in that they have to listen for clues . . .' – 'They have become much more critical of the feasibility of a story and always question whether fact or fiction . . . they do, now, listen for clues . . .'.

During the second year of the project (1978–9) a set of 100 picture slides has been added to each teacher's armoury of resources. As were the stories and the objects, these pictures have been chosen to reveal a high degree of authentic primary evidence from the past. Thus, a painting of Dunkirk from the Imperial War Museum can be added to Idris Davies's poem and a grandfather's written reminiscences; a still from Ingrid Bergman's 1948 film about Joan of Arc can be compared with Joan's own story. Several medieval illustrations, a collection of seventeenth-century nautical seascapes, prehistoric cave paintings from Lascaux, a set of colourful Victorian pictures and black and white photographs, NASA film of space walks, all are provided for individual and group discussion. With each picture, a prompt card or worksheet, similar to the cue cards provided for discussion of objects and stories, suggests again the constant question to be asked 'What do you see in the picture?'; 'If the picture tells a story, what is it about?'; 'When did this happen?'; 'What clues do you see?'; 'Was the picture

made at the same time that the story happened?'; and, finally, 'Do you think the picture gives a true view of what is happening?'.

As the children gain in maturity and experience during the third and fourth years of the project (1979–81), further documentary and written evidence will be brought to bear. From the pictures, the stories and the museum objects, it is already apparent that only a small step remains towards 'the document': in some cases mentioned above this transition has already taken place without effort. It is but a small step from the story of St. Joan to the evidence at her trials; from 'King John and the Abbot' to the manor rolls of Hales; from the Black Prince at Crécy to the building accounts for a medieval castle; from the Bayeux Tapestry to Domesday Book.

So far, the evidence of story, object and picture is taken weekly in a random, not necessarily chronological order. Instead, all children's discussions are related week by week to a classroom time-line. These references are encouraged to be linguistic in form, rather than numerically counted or scaled. Sequence and duration are discussed with the teacher in terms of 'earlier and later' and 'before and after' rather than in arithmetical measurement of numbered dates.

To monitor our progress, a series of regular verbal, arithmetical and picture tests has been devised which, though as yet somewhat crude and exploratory, already yields some positive results. Similar tests of the children's awareness of 'authenticity', particularly in the form of the pictures, will be set in the summer term of 1978.

Some observations

Conclusions at this early stage would be premature. Certain tentative observations are, however, on the basis of four years' systematic work, unavoidable. First, it appears that children from 7 to 8 years of age are able to recognize a wide variety of historical stereotypes. These range from fossils to Concorde, from dinosaurs to astronauts. They include such diverse characters and incidents as Guy Fawkes, the Bayeux Tapestry, Tutankhamen, Roman legionaries, medieval castles and cathedrals, stage coaches, formula one racing cars, Stonehenge, the Crucifixion, antique telephones and soldiers of the First World War.

Recognition of such items offered in pictorial form stands high, at about 60 per cent average marks for both pilot and control groups. In basic number skills, verbal reasoning and vocabulary tests, both groups average equally high marks – about 60 per cent. The ability to form a correct sequence of ten idea-pictures is evidently capable of improvement as a result of the special curriculum being offered to the pilot group. Their marks have begun to rise at the end of the first year's work, from an average 30 per cent at 7 to about 50 per cent at 8, while the control group remains firmly placed at 30–35 per cent. The children's understanding and ability are predictably high for any two of the most recent figures – for example, the present Queen and a First World War soldier, Concorde and Queen Victoria, or an up-to-date racing car and an antique telephone. At this end of the time-scale, both groups score accurately, with only a 10–12 per cent difference between them. Unexpectedly, the ability of the pilot group to sequence a series of the *first four* or even *five* pictures (for example, fossil-dinosaur-caveman-mummy) tends to improve significantly over the control sample. Thus we perceive that the 7- to 8-year-old children's idea of 'recent' is sound but no more so than their possible appreciation of the most remote eras of 'long long ago'. This facility, as yet, applies only to the ability to recognize sequence but not, as yet, to calculate duration.

Between the Battle of Hastings and Queen Victoria – an insignificantly brief and parochial span – the children's ideas of sequence are less confident and more prone to anachronism. This is, in fact, the time-span where earlier researchers legitimately refer to a 'lumping together' of time and its events. This may well be capable of some improvement within the pilot group as a result of their special curriculum and the classroom time-lines.

The children's general response to picture tests is usually more confident and successful, and more capable of objective measurement, than their ability to write or calculate an answer at 7 or 8 years of age. Frequently, nearly illiterate boys and girls have surprised their class teachers by a consistently high level of success with the picture tests, and it is commonplace for the marks of the (written) recognition and description section of the test to fall below those of the correct sequences of the pictures in the same test. Eighty-six per cent: 'Surprising result for an "average" child'; 74 per cent 'Surprising result as classwork is very poor'; 74 per cent: 'Surprisingly high – he lacks power of concentration'; 67 per cent 'Remedial reader'; 71 per cent 'Surprising results as his family background is Indian' these are typical of numerous responses by class teachers to the average mark for a full year's work and tests.

At the upper end of the ability range, 5 per cent of the pilot sample are, at 8 years of age, fully capable of correctly sequencing ten picture-stereotypes. This top level of consistently high marks in a special area of 'giftedness' may well be identified by further tests of this year group. Many common misconceptions – for example, that the Nativity is synonymous with Creation, so that Christ must take first place in any sequence or, alternatively, that nothing is known to exist before dinosaurs – have emerged from the tests so far. These points can now be explained to the pilot group of children by reference to their time-lines.

Thus, we intend to demonstrate that, from 7 to 11 years of age, the child's increasing awareness of time before his birth is best fostered by a series of practical experiences and situations, using concrete, tangible items of evidence. Success will depend more upon the development of existing skills – more particularly linguistic development – and of desirable attitudes, than upon formal thinking. For example, the oft-cited need to order a set of historic events is similar to early experience offered by schools in number work and sentence building. The ability, evident in many 10-year-old children to space events in terms of centuries, generations and decades, may depend largely upon the acquisition of an essential vocabulary. The chronological skill of placing events in order over periods of years that range over millions, thousands, hundreds and tens of years will depend considerably upon the child's mastery of elementary mathematical ideas, the concept of place order and the skill of simple subtraction which are taken for granted by mathematics teachers of 7- to 11-year-olds.

If teachers are encouraged to perceive such skills as being at least as essential to 'history' for the very young, as the more grandiloquent demand for the development of 'concepts of time' (which most adults do not appear to have mastered at any high degree of competence), then the 7-year-old's ability to appreciate the past and formulate simple deductions from its evidence may be fostered and developed. As it is, in the absence of a favourable climate, history is in danger of going by default until the age of 13, by which time any progress made will have been accidental rather than educational.

The ultimate outcome of our efforts is intended to be the devising

of a new, realistic history syllabus for all children aged 7 to 11, at least in one education authority. This syllabus must be, as a result of our current efforts, a syllabus that will be both conceptually sound and well-orientated toward certain required skills. The more abstruse problems of logical conclusions and value-judgements will be left, as Hallam and more pessimistic researchers have always advocated, to a later stage of adolescent development. In the long term, the formal work may well benefit from a new and early start.

Meanwhile, our experiment will continue during 1978–79, turning next, alongside sequence, to the concept of authenticity and, possibly, duration. Given the continuing goodwill of the schools involved, their teachers' well-prepared efforts and the equally vigorous response of the chosen children, we have high hopes of further success.

Trends 1978/1

Historical understanding at the upper secondary level

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What level of historical understanding can be achieved by children at the upper secondary level? When pupils are taught to view history as 'an approach to knowledge' as well as 'a body of knowledge', they are capable, in my experience, of more than is customarily acknowledged. This is not to say that many will master all the complexities of an historical situation; nor will they all necessarily appreciate those distinctions between 'nationhood' and 'statehood', 'canon' and 'common law', 'divorce' and 'annulment' that can so often affect the course of history. But, when teaching is specifically directed towards the methods and rationale of history, pupils on examination courses can acquire a deeper understanding of the historian's art and purposes than they typically derive from content-orientated teaching.

Pupils on and below the CSE threshold

Virtually all lower-ability 15-year-olds are able to grasp something of the nature and relevance of historical knowledge. Even when they are apparently incapable of explaining very much, the least able can be made aware that much of history demands explanation and that all such explanation is somehow different from, and less secure than, the 'facts' explained. This level of understanding may sound utterly banal, but the majority of less-able adolescents taking content-orientated courses come to regard history either as an exclusively descriptive subject – 'You have to know the facts – "why" doesn't matter . . . The teacher tells you what happens or you read it in a book' – 'It's best for teacher to tell you what to think, and then learn it. You can't go wrong then'! These children are not stupid. They have observed how they are taught history and inferred the nature of the subject from the only data available to them – their own activities as students. As one girl remarked, 'We do more about what happened than what made it happen'. But children taught differently come to perceive history as a problem-solving, explanation-seeking discipline. They can also see that 'you have to look at the evidence' in history. Pupils can be taught

to view the basic 'facts' of history as somehow having been constructed from available evidence instead of as pre-existent entities. Not all adolescents can be made expert in the use of evidence, but all seem able to grasp that there is something underlying historical narrative that differs from it in kind.

Equally significant is an appreciation of the subject's personal and contemporary relevance. G. R. Elton has said that prior to the sixth form children are 'by nature interested in the present and future only.'* This may be so, but even the less able can understand that the present is an extension and continuation of the past inasmuch as the whole process 'is not yet over and done with, we are understanding history as it is made'. Thus children unable to see why such running conflicts as the Arab-Israeli or Irish questions evade resolution, given an honest desire for peace or the justifiable application of force, can be made aware of an historical dimension that erodes trust in even-handed arbitration and blurs the distinction between victim and aggressor. In other words, an appreciation of the past can be predicated upon an interest in the present. Pupils can come to see that, although the past is dead, it is far from gone.

Idea to grasp

Perhaps the most vital idea adolescents need to grasp is that, while history textbooks are principally concerned with the activities and fortunes of a 'great minority', their actions have primary significance only insofar as they affect the lives and livelihoods of ordinary people. The less able are perfectly capable of grasping that history is about 'people like us'; that 'if all the normal people weren't there, there wouldn't be any history'; and that 'people are only famous because we make them famous': but this level of understanding seems unlikely to emerge from the diet of exciting stories recommended by Professor Elton. When history is presented as the family chronicle of the rich, the famous and the powerful, children are apt to banish common man from the stage of history, concluding that 'when you go back in history it's usually the well-known people – politicians and that' who excite attention. Worse still, a perpetual round of inventions and enclosures may lead them to usurp Man's role as protagonist – 'History isn't about people; it's about what happens'.

These examples illustrate no more than the irreducible minimum of what virtually all adolescents seem capable of grasping. It is important to note, however, that very many children fail to attain this minimum through conventional history syllabuses. These ideas also constitute 'a minimum' in the sense that until pupils attain this level of understanding they cannot begin to see what sort of pursuit history amounts to, nor can they imagine why it should be pursued. Most adolescents, however, are able to go far beyond this bare minimum.

Pupils in the upper CSE range

Good CSE candidates are capable of understanding something of the logical structure of the discipline. They can, for example, grasp that change occurs at different rates in time, and they may also come to realize that things do not always change for the better. This level of understanding, however, is rarely attained by CSE pupils taking content-orientated courses but is entirely typical of pupils taught history as an 'approach to knowledge'. The traditionally taught pupil, on the other hand, frequently believes in the necessity of progress, and sees technological advance and an increasing standard of living as

* Elton, G. R. 'What history should we teach', in M. Ballard (editor), *New Movements in the Study and Teaching of History*. London: Temple Smith, 1970.

'inevitable because things can't go backwards . . . they've got to get better'. Perhaps this is an assumption that they bring to the study of history, but it is one which familiarity with the subject should and can refute.

More difficult for the CSE child is the concept of continuity – the idea that the possibilities for present change are constrained by past events. But even this level of understanding is not completely beyond a substantial minority of such pupils, as the following exchange with a child of below average ability exemplifies:

> 'What is it that changes?
>
> Not everything . . . not everything can change together because the people wouldn't understand it then.
>
> Why not?
>
> It'd be like being on Mars – or hundreds of years in the future.
>
> Can any change come about?
>
> Not any . . . only some! It's got to be linked to what's happened in the past.'

This extract may not sound too impressive, even for a child of below average intelligence, but just how difficult adolescents find the concepts of change and continuity may be gauged from the following:

> 'Things are always changing in history . . . You've got to have new things, so the old ones go.
>
> What, actually, is changed in this process?
>
> The old things! They go and new ones happen.
>
> So the existing states of affairs are changed into the new?
>
> . . . Not exactly . . . When someone gets off a bus and someone else gets on they've changed but they're still themselves, aren't they?'

This model of change and continuity in history was produced by an average GCE candidate and is typical – in sophistication if not in substance – of children following established O-level syllabuses. When scrutinized in detail, it is not an entirely unsophisticated conception: not everything in history changes at the same time, and hence continuity of a certain sort is ensured; change is also seen as necessarily involving 'ceasing to be' as well as 'becoming'. But the 'change as displacement' theory appears to limit that which changes or continues to 'things in the world', and it fails to comprehend patterns of thought, action and interaction. It also makes the assumption that the number of 'things in the world' is somehow finite, much like the composition of a football team, and fails to admit causal relationships subsisting among displaced, persisting and replacement items. These observations should not be thought to detract too much from the 'bus' analogy. On the contrary, the fact that an analysis of just one child's image of change and continuity in history can elucidate the conceptual complexity of such ideas to the extent illustrated is indicative of the profound demands that the subject makes upon pupils' powers of understanding. Far from revealing the limitiations of adolescent intelligence, detailed analysis of pupils' historical ideas and assumptions exposes the sophistication and abstraction of such concepts as 'change' and 'continuity' which a traditional chronological approach

to history assumes children can accommodate almost as a matter of course. That the bright CSE pupil can, when specifically taught with this end in view, come to a deeper apprehension of change and continuity than is evident in the extract cited exemplifies the degree to which the adolescent intelligence is capable of rising to the challenge of history.

The top end of the ability range

Although rarely able to make mature and completely satisfactory judgements about particular historical issues, the bright GCE candidate can be taught to think in an abstract and logical manner. When encouraged to develop their analytical intelligence, most adolescents in the top 10 per cent of the ability range are able to use evidence to construct elementary tests of historical hypotheses. What they find difficult, yet by no means entirely beyond them, is to distinguish cases in which evidence 'implies' some conclusion from instances in which evidence and hypothesis are merely 'consistent'; similarly, they tend to confuse 'contrariety' and 'contradiction', both between discrete sources and between source and conclusion. More important, perhaps, is their ability to draw some pertinent, albeit rudimentary, distinctions between historical and natural scientific modes of explanation. Associated with this level of understanding is the capacity to differentiate, and even to use, such highly abstract concepts as those of 'sufficient' and 'necessary' condition. Intensive analysis of causal questions in history leads most bright adolescents to conclude that necessity of condition is generally implied by statements of historical causation. 'Before any event is stated to be a cause one must look to see if the result would have occurred without it. Not everything that occurred before 1939 could have been left out with the result still existent.' The phrasing here is somewhat stilted, but the meaning is clear.

At a higher level still, the bright GCE candidate can come to terms with the idea that causal explanation in history amounts to both an 'explanation of possibility' and a 'reduction of uncertainty' that is different in type from, and not merely inferior to, the more finite and mathematical explanations of natural science. The following exchange is quoted at length:

> 'You can say that event Y is definitely going to happen if you have established from previous trials that Y always follows from X – but you can't establish that in history . . . History has been helping you to define what you mean . . . (. . .) . . . In history everything is unique . . . everything is different at different times.
>
> Can you give an example?
>
> Well the Nazis in power in Germany might not cause a war like World War Two now . . .
>
> In that case, how good an explanation of Y is it for the historian to say 'X caused it'?
>
> In history we mean that things are necessary to make something happen, but we can't say they will because we can't know all the causes that may be needed.
>
> Why not?
>
> Because people won't react the same . . . I mean, people have heard about Hitler and might not fall for the same thing twice.
>
> Then we are left with the same problem! What is being explained by the historian citing causes?

> . . . I know what, but it's difficult! . . . He's explaining everything that couldn't have happened . . . except for some freak or accident.
>
> So is his explanation totally negative?
>
> No. because when you've said this and this and this couldn't really have happened, normally you've only one or a few things left.'

The reader should not have to agree with this girl's view of historical explanation to recognize it as serious historical thinking. And when encouraged to tackle the logic of the discipline, a good half of all O-level candidates appear capable of refining their ideas to this level and beyond. A final example may prove instructive. The following exchange about 'change and time' involves a boy unable or unwilling, for whatever reason, to master the minutiae of historical content:

> 'Well . . . it's not just that things need time to happen . . . but although anything *could* happen from any state of things, different things would need different lengths of time . . . spans . . . and this makes some very unlikely – but it can speed up or slow down as things happen quickly or not.
>
> How quickly can things happen?
>
> Not so – as fast as people can do things or change their minds or come to decisions.'

This boy was not entered for O-level, but it would be idle to deny his insight into the subject.

Varieties of historical understanding

So far I have focused attention on the child's apprehension of history as being what Paul Hirst calls a 'form of knowledge',* a distinct way of making sense of experience, rather than on his understanding of the past as such. Although children's understanding of the past varies greatly according to the style and quality of the teaching received, there is no evidence to suggest that teachers greatly underestimate what adolescents are capable of achieving. Indeed, it seems as though their capacity reliably to penetrate the political subtleties, constitutional nuances and moral dilemmas forming the stuff-and-substance of history is limited by immaturity and an imperfect knowledge of an adult world for which they have uncertain sympathies. Whatever the situation, it is clear that, when taught in certain ways, adolescents can attain far greater insight into the logic, methods and perspectives of history than is generally recognized.

What the teacher recognizes

One further point must be emphasized. Even in respect of the child's grasp of the historian's art and purposes, what the teacher is able and prepared to recognize as worthwhile understanding is critical. An example may clarify this point. Children construe multicausality in very many ways. Some, having been taught that historical outcomes were only ever more or less probable, conclude that the more causes they can identify for an event, the more likely was that event to have happened. This is the logic of the coconut shy: the more throws allowed, the greater the chance of hitting the target. Other children, operating Piagetian conservation schemes, argue that the greater the number of

* Hirst, P. H. 'Liberal education and the nature of knowledge', in R. D. Archambault, *Philosophical Analysis and Education*. London: Routledge and Kegan Paul, 1965.

causal factors at work, the 'bigger' the outcome. Causal mass is conserved in the consequence. Now both conceptions are so wrong that it is nonsensical to talk about 'degrees of wrongness'. But evidence suggests that the probability model is more typical of children of higher ability, that it appears later in the development of adolescent thinking about historical causation, and that it serves as a springboard to more sophisticated ideas. Thus the child who thinks in terms of probability can be said to have a better understanding of historical processes than the child concerned to conserve causal mass, despite the illegitimacy of both ideas. Again, even when taught how to use evidence over a period of three years, some CSE candidates of low ability think of historical sources as something similar to jigsaw pieces, demanding assembly into a coherent narrative. These children, some teachers might insist, have learned little and are in any case incapable of learning very much. Other teachers would contend that the first and most vital principles have been grasped. Furthermore, the apparently limited 'jigsaw' model of evidence is easily developed: the child can come to expect missing pieces, can be taught that some pieces do not fit or are to be mistrusted, and may eventually come to realize that more than one jigsaw can be assembled from a given selection of pieces (sources). Once this stage has been reached, a pupil is on the threshold of inference.

Whatever caveats we may wish to make about the limitations of adolescent intelligence, the fact remains that adolescents are capable of far more than is customarily demanded by content-orientated O-level and CSE courses. The least-able children can understand that history is an explanation-seeking, knowledge-constructing discipline; average pupils can make considerable headway with such fundamental concepts and assumptions as 'action' and 'development', 'causation' and 'necessity'; and the most able can approach the subject at a genuinely theoretical level. Perhaps the key to a more general unlocking of potentialities is for the teacher to ground his teaching upon the historical ideas that his pupils already possess, and for him to frame instructional objectives around the specific misconceptions they evince about, for example, the use of source materials or the meaning of causal statements.

Trends 1978/1

History, science and technology

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One of the main themes in the current debate on the curriculum is that schools ought to prepare young people for life in a 'technology-based society', whether we consider people as citizens, workers or private individuals. History has a clear and central role to play in this enterprise, although as it is presently constituted in many middle and secondary schools it might find the task difficult. If we are to master technology, to bend it to beneficial purposes, and to curb its more

sinister aspects, then it is essential to understand its nature and logic. These things have to be investigated historically if they are to be comprehended properly. The origins, possibilities and threats of technology can all be illuminated by history.

Definitions

Terms such as 'science', 'technology' and 'history' require working definitions before we can establish any possible or useful relations between them, particularly if we are to consider any consequent pedagogical implications. Technology has been described usefully as 'the application of science to the human condition', and we may call science 'the rational investigation of the natural universe'. 'History' is a term employed in three distinct ways: the past; a record of the past; and an interpretation of that record – the second variation prevails in English and Welsh schools. Further refinements are possible: 'pure' as opposed to 'applied' science; and 'high', 'low', 'hard' and 'soft' technology. However, a touch of Occam's razor is necessary at this point if the argument is to be contained and coherent. While science and history are disciplines with their own methods and assumptions, technology is much more interdisciplinary; it cannot be comprehended by science, history or craft alone.

History, science and technology can be combined or related in four distinct ways. First, it has been claimed that history is a science itself: J. B. Bury made this assertion in 1902.* However, although history can and should employ many of the elements of true scientific method (observation, selection, creating and testing hypotheses), there are some important differences, notably that historians cannot test their hypotheses in a series of controlled experiments. A second connexion is that of history and science helping each other through the medium of technology, for example in dating techniques (such as 'dendrochronology', ie tree-ring dating, or archaeo-metallurgy); in return, historians' familiarity with long runs of archives and diaries has aided the work of climatologists. Thirdly, there are the histories of science and of technology. These are rather specialized areas, perhaps too narrow for general school use although there is at least one GCE 'history of science' syllabus. The fourth area concerns us most: the study of the effects of science and technology on human development. Here lies the largest set of usable possibilities for teachers of history and related areas of the curriculum.

Public examination returns and tentative generalizations from HMI visits to schools suggest that most pupils study some history between 9 and 14, and that about 55 per cent opt for it as a specialism between 14 and 16. About half of the specialists take traditional 'political/diplomatic' history and about one-quarter take economic or social-and-economic history: the distinction is important as will be apparent later. For the most part, non-examination 14–16-year-old pupils incline to social and economic history. In 1975, there were 144,000 candidates for the varieties of O-level history. It follows that about 45 per cent of school pupils drop history at 14; in all probability they will have had a 'chronological run' up to that point, or they will have been exposed to a series of topics.

There is already plenty of technological history scattered around in this national history pattern, but in a very haphazard and unsystematic way. It cannot be said that this arrangement does very much to explain the nature of technology and its historic relationship with social development. Typical and time-hallowed technological

* In his inaugural address as Regius Professor of History, Cambridge.

items in 'standard' history are: early hunting implements; the pyramids; bits and pieces of military engineering; some early industrial processes (usually concerned with the textile industries); canals and railways. Frequently these artefacts are taken as read and are not treated as symbols of something underlying human history. The flowering of late-nineteenth-century technology has traditionally received scant attention; consequently the telephone, cinema, radio, gramophone, aeroplane or motor car are placed lower in the hierarchy of historical esteem than that familiar textbook icon, the spinning jenny. The main charges against this development of technological content in history courses are that it lacks system; it does not attempt to explain or analyse technology as such; it is arbitrary in its choice of evidence; and, above all, it is tacked on to another framework of reference (political history in the main) rather than attempting to treat technology as a foundation of civilized life. None of this is in the least surprising when we recall that there is no identifiable theory, doctrine or curriculum underpinning our education system which might, therefore, suggest the inclusion of this, or the omission of that.

Common perception

The main reason for this common perception of history as a political chronology can itself be explained historically. Much past history was written about, and to a large extent by and for, the governing and political classes. Technology was not of major interest to these people, although clearly they made use of it like anyone else. This tradition of political history received its first main challenge from social historians like J. R. Green in the nineteenth century. They wanted their history, as Thackeray had it, 'more familiar than heroic' and tended to share Voltaire's feeling about the aridity of history as a mere record of 'one barbarian king succeeding another on the banks of the Oxus or the Jaxartes' – or, for that matter, one cabinet succeeding another on the banks of the Thames. Although at first there was a tendency to treat 'industry' or 'the poor' as problems to be solved or mitigated by political means, the development was crucial. It helped to give rise to the rich diversity of history now on offer both in academic and popular circles: industrial archaeology, with its flourishing local associations; business history; military history; demographic, urban, econometric and psychohistory. Many of these variations are concerned with technology. The heart of the matter is exemplified by the motor manufacturer, Henry Ford, who said: 'Records of old wars mean nothing to me – history is more or less bunk, it's tradition'. On the other hand, when setting up his Greenfield village museum he stated 'I'm going to give the people an idea of real history . . . we are going to show just what happened in years gone by' – precisely the aim of Leopold von Ranke, a leading nineteenth-century historian who thought that history ought to show 'how it actually happened'. The one worked in archives, the other assembled domestic and industrial gadgetry; both served history well if rather one-sidedly in their respective roles. The emancipation of history has gone a long way beyond higher education: the shelves of national booksellers are clear evidence of this, crowded with books on old buildings, motor cars, railways, warfare and the dresses, dishes and entertainments of our ancestors. Museums, television and the tourist industry have all gauged this major change quite accurately.

In turn, history in schools has been suffused with the new approach to the discipline, although it probably makes more progress where teachers and pupils are furthest removed from the imperatives of public examinations. There is some interesting evidence for this

assertion: first, an informal HMI survey of GCE syllabuses and papers found that the incidence of technological elements (generously interpreted) was only 4 per cent in 'political' papers but 25 per cent in social and economic ones. A harder interpretation reduced the incidence in both cases and it was so slight in the political papers that it barely registered. This low incidence will not encourage teachers and pupils to depart very far from mainline political or social history. Another piece of suggested evidence is in the high number of 11–16-year-olds who reply to oral questions about change, progress, the price of change and so on, in technological terms (for example the convenience of household machinery, the threat of nuclear warfare, the relief of suffering afforded by modern drugs). Examples cited by 'political' historians were strictly off the syllabus. Many history teachers, of course, have a time-honoured tradition of employing anecdotes and material outside the syllabus to broaden their courses. The answers did not seem to be significantly different at any ability level, but history is a highly accessible activity and its progression from university chair to layman or school pupil is more of a spectrum than a hierarchy.

The question nevertheless remains: why should we bother to inject science and technology into our history courses? In turn, if we do this, how are we to fit such elements into crowded syllabuses? We should add science and technology to our history because they have been the principal foundations of civilization, and powerful forces behind social and political change. It is a contemporary and occidental conceit to think that technology is modern and Western. Thomas Carlyle praised the timeless importance of 'the nameless boor who first hammered out an iron spade'; he certainly applied science most effectively to the human condition. The dazzling achievements of oriental and Islamic science and technology are a part of our common heritage. We respect the masons of the Acropolis or Chartres cathedral as we respect the masters of electronics today – for their professional style and technique. This leads to another reason for including these things in history courses: science and technology have been common experiences, at one level or another, of the whole human family. Teachers may wish to draw attention to this 'unity in diversity' of our many cultures. Any 'world' or 'European' studies courses that omit this consideration are very partial and imperfect, and have missed a potent opportunity. We are reminded by the Green Paper, *Education in Schools*,* that 'human achievement and aspirations' merit a place on the curriculum. Science and technology, like the arts, are areas where human achievement has been varied and inspiring, as well as being of everyday utility.

Difficulties and opportunities

And yet even a slight acquaintance with technology reveals that it generates difficulties as well as opportunities. One of the dangers in advocating technology on a syllabus is that the optimum will be confused with the maximum, as is often the case when new causes are pleaded in education. This can only lead to an uncritical acceptance of coarse materialism or of an inexorable 'march of progress'. This route leads to the world of the techno-cranks, like the 'Steam Intellect Society' lampooned by Thomas Love Peacock in *Crochet Castle*, or represented by the sinister Bazaroff (Turgenev's *Fathers and Children*), who thought 'one chemist is worth twenty poets', an assertion that begs many questions to say the least. It is untrue that history is little more

* *Education in Schools: A Consultative Document*, Cmnd 6869. London: HMSO, 1977.

than the story of the generation and utilization of kilowatt-hours, and any school of history that subscribes to such doctrines will not prepare young people for society as it is, or as most sane people would wish it to be. There is, however, an equally pernicious tradition (also dating from the industrial revolution) that asserts that technology is unnatural and that it enslaves us. This prejudice is not without influence in our schools. It is based on historical ignorance and maintains itself by filtering out any consideration of the very liberating nature of so many familiar technical devices: glass windows, which freed our forebears from darkness and draughts; bicycles, which opened out horizons for city dwellers a century ago; typewriters, which (arguably) did as much for women's liberation as any extension of the franchise; and, of course, surgery and pharmaceuticals, which have freed so many people from fear and suffering. This prejudice also ignores the manifold ways in which technology has extended the scope of the arts and has presented the results to large and popular audiences. The literary and humanistic suspicion of technology is old and influential and it has played a part in over-balancing the school curriculum against its enemy. It was a symbolic, if sad, irony that an early high-priest of this doctrine, Matthew Arnold, met his death while running to catch a Liverpool tram.

The right balance

Curriculum-planners have to get this balance right according to their own lights. The application of science to the human condition has many implications: moral, ethical and political, as well as economic and social. Young people need to be guided carefully in this area, not subjected to unexamined folklore, and history can provide some useful data for this exercise.

For those teachers who wish to adapt history courses to admit science and technology according to a rational plan, there are snares to avoid and organizational problems to face. First, it is important to avoid the heroic tendencies of history, thinking solely in terms of great inventors or scientists, thus exchanging one 'grand history' for another. This kind of approach misleads, for while it is true that the individual efforts of people like Edison, Marie Curie or St Bénézet (the only canonized engineer to date) are most worthy of record, yet even Newton thought he only saw as far as he did because he 'stood on the shoulders of giants'. Science and technology are great collective efforts involving millions of people. Also, technology is just as evident in a bathroom tap or a rope suspension bridge as it is in a man-made satellite or in papers read to learned societies, and it is immanent in much of our social and economic life. To advocate more science and technology in history courses is not, emphatically, to advocate a great intellectual revolution. It is to suggest rather more of the engineers and artisans and rather less of the chancellors and kings. This is a question of adjustment, not of massive inundation. Anyone suggesting or implementing these changes will have to face problems implied logically by this article. If school history is to relate more precisely to our competence in dealing with the problems of a high-technology society (and, moreover, one aspiring to be more perfectly democratic in its management of these affairs), then we have to ask questions about: fashioning an overall school curriculum that will encourage or require history to illuminate the problems of technology and its effects upon our civilization; the appropriate initial and in-service training for teachers; the production of appropriate resources; the requirements of external examinations and their syllabuses; and the relations between history and other disciplines. Already many history teachers and a few courses

(the Schools Council History 13–16 course, for example) have shown what can be done within present constraints, so it follows that an initial and cost-effective strategy would be to rationalize that which is, before turning to that which ought to be.

Very often we fail to see the obvious because we are immersed in it and have never 'stepped back'. Is it not curious, however, that a discipline we call 'history' has many courses that barely touch upon our highest technical and cultural achievements? There are 'history' syllabuses covering the nineteenth century that never mention Beethoven, Gauss, Brunel, telegraphs or tinned food, but pay assiduous attention to Gladstone's second cabinet or the treaty of Unkiar-Skelessi. There are students of the 'seventeenth century' who have never heard of Kepler or the baroque. It is arguable that Darwin and Copernicus radically affected the ways in which we perceive our condition, but they are accorded less history syllabus time than Charlemagne or Bismarck: once again, the balance is wrong. Unless history can show a greater awareness of these matters, it runs a high risk of being edged to the periphery of the curriculum. If it can adapt, then it will have earned a central place, so much so that while history may not be twenty times as valuable as chemistry (with deference to Bazaroff) then at least it might demonstrate that it was no less valuable.

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Teaching history in a multicultural society

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'When I read the history I can feel that through me heart and that so many have been sacrificed for that religion. It's no point throwing it away just like that.'

*Sikh teenager, Newcastle**

'Above all it is *your* civilization, it is you . . . The suet pudding and red pillar boxes have entered into your soul. Good or evil, it is yours. You belong to it, and this side of the grave you will never get away from the marks that it has given you.'

George Orwell†

The 1977 Green Paper, *Education in Schools*,‡ emphasizes that our society is a multicultural one and that we now live in a complex, interdependent world. It recommends that the curriculum should reflect

* Quoted in Taylor, J. H. *The Halfway Generation*, Slough: NFER, 1976.
† Orwell, George. *The Collected Essays, Journalism and Letters of George Orwell*. Sonia Orwell and Ian Angus (editors). Vol 2, *My Country Right or Left*, 1940–43, Harmondsworth: Penguin, 1970.
‡ *Education in Schools: A Consultative Document*. Cmnd. 6869. London: HMSO, 1977.

these facts as well as our corresponding need to know about and understand other cultures. This need is daily confirmed by the evidence of press reports and opinion polls which yield considerable evidence of underlying interracial tensions and resentments. The curriculum should also have an international dimension not only in terms of its importance in reducing prejudice and strains within our own society, but as a means of influencing attitudes towards the wider international community. A recent American report* suggested that 'the values and the perceptions of reality of the citizenry set effective limits, directly or indirectly, to the discretion of foreign-policy makers.' This is a large claim but one which is valid for a liberal democratic society.

Importance of history

History, with its potential for countering prejudice and narrow parochialism not only in the classroom but in the larger context of our multicultural society, is particularly important in this changing national and international environment. Britain has not suddenly become a multicultural society; it has always been one. What else is implied by the struggles of Roman against Pict and Celt, of Saxon against Dane and Norman?

Current history textbooks usually ignore the fact that the first great outburst of exultant English nationalism coincided not only with the threat of Spanish conquest and the triumphant flowering of our national language in its modern form, but also with a massive infusion of European refugees – refugees who brought with them agricultural and industrial techniques that were to prove crucial to subsequent economic expansion. And comparatively little attention is paid to relations within the British Isles with the gradual spread of a metropolitan English culture over areas that have attempted to retain their own distinctive cultural identities – devolution being the latest constitutional footnote to this continuing story.

Again, hostile reaction to immigrant minority groups is by no means a post-Second World War phenomenon, while in the longer term there is also the evidence of the successful integration of such groups. But more immigration from countries of the new Commonwealth has added the dimension of colour, and this raises the question of whether historical precedents are comparable. This may be a new dimension but it forms part of Britain's long and continuing multicultural history. What is certainly new is the crucial dimension of an increasingly interdependent world.

A rare subject

History is a rare subject where facts and emotion meet. In fostering tolerance and an awareness of the dangers of unthinking prejudice, the first people we must learn to understand are our own ancestors. Although emotionally we may feel closer to them and feel history 'through the heart', ethnic minorities are, in many respects, closer to the 'native' British in the way in which they understand the world than they are to the people with whom either claim the mystic bond of blood.

Only when the received tradition is subject to critical scrutiny can society be said to have a history in the modern sense of the term. But history and tradition cannot be untangled, nor tradition done away with. In this process, the mass media and the process of oral transmission, which is still a central feature of acculturation in our society,

* *Education for Global Interdependence.* A report with recommendations to the Government/Academic Interface Committee from the International Education Project. American Council for Education, October 1975.

are powerful influences, but they are influences that can be examined. We can at least come to appreciate why a certain traditional belief persists, even when evidence undermines the validity of that belief. History teaching is not immune from the questions posed by this relation between history and tradition. An American educationist has stated that American history textbooks never seriously examine the roots of foreign distrust of the United States (for example, the Mexican war is never seen as a classic grab of territory) but nevertheless has argued: 'Nor are these hypocrisies unfortunate. Children should think well of their country; and given the universal standards in these matters, the United States has, on the whole, behaved over the years with great decency and generosity. On utilitarian grounds, too, it can be argued that a magnanimous self-image is more likely to make people magnanimous in the future. What purpose would be served by muckraking the history of American foreign policy?'*

The study of history at whatever level should, above all, give a balance and perspective that enables us to make judgements about the past and about current events by setting them in the context of our understanding of the general framework of change in human affairs. The history syllabus should distinguish the significant from the trivial and put both in their proper place. Any reasonable account of the First World War, for example, should establish the fact that hostilities occurred in Shantung as well as on the Somme. It might likewise be stressed that the transported captives of the Ashanti and the redundant cotton weavers of Bengal would have been just as pleased as Richard Oastler if Arkwright had stuck to making wigs. For while Britain is a multicultural society, it also has a trading economy whose past and future prosperity are inextricably bound up with the development of advanced technologies of production and communication, and with the maintenance of an extensive network of linkages with many different parts of the world.

As a democracy, Britain is committed to certain fundamental political values (constitutionalism, minority rights, the orderly transfer of legitimate power) which are reflected in our institutions. And these different historical strands cannot easily be separated from one another, although it might be pedagogically convenient at times to behave as though they could be. History's very distinctive contribution in giving balance and perspective to our judgements is to ensure that the interlinking of these factors is appreciated. Thus the particular pattern of Britain's multicultural society is itself a by-product of our activities as a trading nation and it also poses certain challenges to us as a liberal democracy.

Cultural complexity

Any approach that stresses our rich cultural heritage must take account of the nexus of conflicting forces and cultural diversity and complexity that go to make it up. It has to encompass Ahmed, whose father came to Wales after the partition of the Punjab, and Susan, who attends a traditional East Anglian comprehensive. Ahmed's father may regret that his son will never achieve colloquial fluency in the local dialect of his own vernacular, let alone appreciate the beauties of Urdu verse, but accepts this as long as he can learn enough Arabic to master at least part of the Quran and remember that he is above all else a Muslim. Neither this, nor Welsh if he happens to live in a Welsh-speaking area, must be at the expense of his English, for this will be crucial for his future.

* Mayer, Martin. *Social Studies in American Schools*. New York: Harper Colophon, 1964.

Again, he may have to persist with French as he has also been a 'European' since Britain joined the EEC. It can be hard work having a rich cultural heritage.

Susan also has a rich cultural heritage, but it is rich in depth rather than in breadth. She is a bright girl who, as she hopes to become a history teacher, knows a lot about parish registers and turnpike trusts, and can tell you how far Speenhamland measures were adopted in her locality. She is dimly aware of China as a large, remote country but would be unable to describe the origins, functions and importance of OPEC, let alone distinguish OPEC from OAPEC.* Ahmed and Susan may represent two ends of the spectrum but this spectrum exists.

We would argue against a syllabus that is exclusively ethnocentric or one that stresses pseudotradition, whether it is in the context of our national history or of 'black' history. History teaching that consciously takes account of the multicultural nature of British society will attempt to ensure that every child can experience and respect his or her own cultural tradition, knows that other traditions exist, and is able to instance examples of achievement from at least some of them. At the most sophisticated level, history teaching could also explore the relation between individual psychology and collective experience that underlies the universal urge to construct personal identity within the framework of an historical consciousness.† More prosaically, but no less demandingly, the phenomenon of multiculturalism can also be examined as it affects not only Britain but also its European neighbours, the superpowers, and virtually every state in Africa, Asia, Latin America and the Caribbean.

World history

We would also see world history as an appropriate response‡ but do not think it necessary to leap at one bound from national history to world history. There are opportunities for teaching British history in a wider perspective. In dealing with the historical relationship between Britain and India, for example, it is possible to avoid a treatment that promotes the clash of arms at the expense of the clash and interaction of cultures; to avoid a stereotyped Britain as the imperial saviour or imperial destroyer; and to take account of the ways in which changes in British policy were brought about by changing circumstances at home. It would also be possible to avoid a stereotyped 'India'; to avoid an approach whereby Hinduism and Islam appear either absurd or esoteric; to consider some of the continuities in Indian history; and to consider the importance of India to Britain and the impact of the Indian connexion.

A very simple but striking and teachable example is given in the following passage where the loan words have been italicized:

* Organization of Petroleum Exporting Countries and Organization of Arab Petroleum Exporting Countries.

† See Henderson, J. L. *A Bridge Across Time: An Assessment of Historical Archetypes*. London: Turnstone Books, 1975.

‡ See *World History – A Secondary School Syllabus*, 1971; *Introducing World History*, 1978; and *World History for 16-plus to 18-plus: N and F Syllabus*, 1978. All are published by the Extramural Division, School of Oriental and African Studies (SOAS), University of London.

A wide range of materials for the lower and middle secondary age range is becoming available – for example the *Harrap World History Programme* series and the Cambridge *Introduction to the History of Mankind;* see also the ILEA *World History Resource Packs* published by Heinemann.

'Returning to the *bungalow* through the *jungle* she threw her *calico* bonnet on the *teak* table, put on her *gingham* apron and slipped into a pair of *sandals*. There was the *tea-caddy* to fill, the *chutney* to prepare for the *curry*, *pepper* and *cheroots* to order from the *bazaar* – she would send a *chit*. The children were out in the *dinghy* and their *khaki dungarees* were sure to be wet. She needed *shampoo*, she still had to mend Tom's *pyjamas* and she never had finished those *chintz* hangings for the *veranda*. Ah well! she really didn't give a *dam* and putting a *shawl* round her shoulders she poured herself some *punch*.'*

The outline of one example of a secondary school history syllabus that puts British history in a world perspective is given in an appendix to this article. There is an increasing range of relevant material appropriate for use across the secondary age range by teachers interested in extending their teaching 'beyond Europe'.†

Whatever the approach, the need to achieve balance and perspective and to discipline emotional response by evidence remains. It is a process that links Ahmed and Susan, the Sikh teenager in Newcastle, and those addressed by Orwell. The development of a critical awareness and of one's own standards of importance, at however unsophisticated a level, are prerequisites for what really forms the basic moral consensus without which an orderly national society cannot continue. Is it merely suet pudding and red pillar boxes and the history felt through the heart, or should it be the essential features of our own national way of life – for example, as Orwell suggests in another context, 'our extraordinary habit of not killing each other'?

Appendix: British history in a world perspective

The following scheme is in no sense prescriptive; it is intended to be indicative of an approach which, by taking Britain as its starting-point in relation to each topic, and by using suitable comparisons and contrasts, would hope to establish:

a. a general chronological perspective;

b. an awareness of the interaction between the history of Britain and that of the rest of the world;

c. some insight into the methods of the historian;

d. a widening vocabulary of the basic concepts used by historians, essential for an informed understanding of political, social and economic affairs.

The scheme corresponds approximately to a conventional secondary school syllabus, based on an outline chronology of British history from early times to the present day. The treatment of the topics becomes, as

* Morris, James. *Pax Britannica*, London: Faber, 1968. (The conjecture that the word 'dam(n)' is the Hindi *dām*, *dawm*, an ancient copper coin of which there were 1,600 to a rupee, is, according to the Oxford English Dictionary, 'ingenious, but has no basis in fact'.)
See also an historiographical article by Harrison, J. E. 'The Rulers and the Ruled' in *South Asian Review*, Vol 3, No 1, October 1969.

† The School of Oriental and African Studies, Extramural Division, Malet Street, London WC1E 7HP, has a resources centre and a consultancy service for teachers. It organizes in-service courses, teacher fellowships, publishes curriculum handbooks, and provides reading and resource lists on request. (See *Trends*, Spring 1977, pp 42–43.)

one proceeds, more detailed and more analytical, being increasingly less concerned with describing human activities than with understanding the motives behind them. Key concepts, such as 'empire' or 'status', should be reiterated with increasing precision and critical awareness of the varieties of usage and meaning that can be attached to them.

1. Ancient Britain – Ancient India
   - — How do we know about the past? The methods of the archaeologist and the historian.
   - — Similarities and differences between pre-Roman Britain and Mohenjo-daro. What do we mean by 'civilized'?

2. Britannia
   - — What did someone living in Roman Britain have in common with someone living in Roman Palestine?
   - — How were Britain and Palestine linked to and affected by Rome? How were all three affected by the rise of Christianity?
   - — What is an empire?

3. Anglo-Saxon England and Muslim Spain
   - — War and law in two conquest societies. The position of the conquered. How did religion support and limit the powers of rulers?
   - — Who was respected and why?
   - — The differing status of the warrior, the trader, the poet, the craftsman, the learned man and the cultivator (possible further comparisons with Africa or Mexico in the fourteenth/sixteenth centuries or China under the T'ang Dynasty).

4. Christendom and Islam
   - — Focus on the pontificate of Innocent III:
     The Lateran Council and the interdict on England as illustrations of the scope of Church influence;
     the Franciscans and heresy;
     how religious beliefs, organizations and activities linked England with the rest of Europe, Byzantium and Islam.
   - — The travels of Ibn Battuta:
     pilgrimage, trade, law and language as cultural linkages. Relations between Islam and the indigenous cultures of Africa, India and China.

5. The emergence of the English (1337–1763)
   - — The growth of national identity as influenced by:
     rivalries in trade and war with France, Scotland, Spain and Holland;
     'discovery' and colonization.
   - — The growth of national identity as expressed in:
     language, literature and folk-song;
     the imposition of metropolitan language and culture on Wales, Ireland, Scotland, and the limits of their penetration.
   - — Comparison with modern nationalist movements (for example, American or German or Indian).

6. Ages of greatness
   - a comparison of the empires of Akbar and Elizabeth:
     territorial expansion and trading contacts;
     the court as a centre of government and patronage;
     religious toleration and its limits;
     architectural and literary achievements.
     (Another possible comparison might be with the medieval empires of the Western Sudan – Ghana, Mali and Songhay.)

7. Contacts, colonies and conquests
   - Trading contacts before European maritime expansion. Chinese, Indian and Arab trade routes and travellers.
   - Comparison of British, Dutch and Spanish motives for expansion.
   - Contrasting attitudes to different indigenous peoples (for example, enslavement, conversion, intermarriage).
   - Reactions of the 'discovered' – from cooperation to resistance (possible comparisons might include West Africa, Bengal, China and the Malay peninsula).

8. Industrialization
   - Why it happened first in Britain (interplay of domestic factors and external linkages).
   - What were its effects:
     on countries which did industrialize;
     on countries which traded with or were administered by industrialized nations?
   - How did Japan manage to industrialize?

9. Imperialists and imperialism
   - Focus on the period since 1880 to illustrate:
     the diversity of forms of Western influence and penetration, including cultural and educational, as well as economic and military (and to include American relations with Latin America or East Asia).
   - Justifications and criticisms of imperial rule.

10. Liberty! Equality! Fraternity?
    - Growth of democratic participation in British government:
      equalization of material circumstances and access to education and employment;
      homogenization of life-styles and diversification of values;
      regionalism as reaction?;
      colour, class and identity.
    - possible comparisons with:
      a. twentieth century China or USA or USSR, and
      b. twentieth century West Indies or South Asia or South Africa.

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The social function of science education

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The former Co-ordinator of the Science in a Social Context Project describes its aims and objectives.

What is science? What sort of work do scientists do? These two questions are closely related and one cannot be answered without some thought being given to the other. Clearly, we must have some idea of what science is before we can describe what scientists do.

Science is a human activity, inseparable from the humans who engage in it, changing with time in response to the needs and interests of its practitioners and to the needs and pressures of the society in which it exists.

To an equation like that there is no single, indisputable, immutable answer. However, the dominant view in Western industrialized society for many years has been that science is essentially, almost exclusively, a technical matter that comprises a number of separate, but related, bodies of knowledge, each with its own practices, techniques, theories and established practitioners and, almost invariably, with its own professional society or institute and its own journal.

However, resistance to this view of science is growing. There is opposition *internally* from those who are becoming aware that anomalies and inconsistencies exist; that science so conceived is very hard, if not impossible, to explain rationally; that the boundaries of science so constituted are purely arbitrary; and that scientists do not behave in the idealized manner that this model supposes.

The *external* pressures brought to bear on this view of science have grown since the Second World War. The first atomic explosions not only laid waste to Hiroshima and Nagasaki but also badly dented scientists' comfortable ivory tower existence. Since then the pressing social problems that seem to have arisen because of science and its applications – for example, the population explosion, the depletion of energy and material resources, pollution, and the rising costs of big science – have led to public disillusionment with science, a drift away from science and, for some, a move towards anti-science. Science is therefore under external pressure to put its house in order and to adapt itself to meet the needs of the future as it has met the needs of the past. Science must now accept that it is a social activity, based in and responding to society, and that it must therefore change in step with society.

In 1972, a group of university and polytechnic science teachers, of whom I was one, agreed to work together to make a serious attack on the reshaping of science education at first degree level – only a part of the problem admittedly, but an important part, and one which our experience and expertise equipped us best to attempt. The Science in a Social Context Project (SISCON) was formed with some funding from Nuffield and, more recently, from Leverhulme. The average

science student on entering university – particularly in the UK – is sometimes disinclined and sometimes ill-equipped to give serious attention to the economics and philosophy of science and technology. The average teacher is the product of a highly specialized education and, although often well aware of the need to provide a more socially conscious education for his students, he lacks the expertise to put his intentions into effect. At least in part, the teacher's problem stems from the lack of suitable teaching/learning materials to help him organize his teaching and his preparation for it (in the way that syllabuses, past examination papers, and textbooks do for established science courses). Ideally, those same materials should also engage the interest of the student and relate the subject matter to the traditional content of science courses. In this age of nuclear weapons, nuclear energy, population problems, antibiotics, integrated circuits, and computers, this should not be very difficult to do – but it nonetheless needs to be done in a manner that is rational and thoughtful rather than emotional. (It must also share an acceptable basis with the student's conventional science studies.)

Achieving this aim

There is no single universally acceptable way of achieving such an aim; no single course, no single package of material will meet the perceived needs of all teachers and all students in all science courses. Nor will there be general agreement about the order of presentation, or the level of maturity required of the student for the study of a particular subject. Different institutions have carefully constructed programmes of study combining conventional science studies with courses in some social aspects of science, sequencing the parts to synchronize well for a particular group of students. There are many such degree programmes now in the United States, the United Kingdom and, indeed, in many other countries. But this scratches only the surface of the problem, providing an integrated treatment for a select group of students and leaving the majority of science students to follow courses oriented entirely towards the acquisition of the experimental and theoretical technical skills of their particular trade.

Set of units

A set of 'units' was produced as a first step in solving the problem of providing teaching/learning materials that are fairly flexible; that provide sufficient resources of a kind that can be adapted to the needs of a particular teacher and a particular group of students; and from which a selection can be assembled in a great variety of ways – for example to complement the 'straight' science teaching or be married with material already within the expertise of the teaching department or institution.

These units are not textbooks of the traditional type. They do not lay down the accepted state of knowledge in a particular topic, covering the subject matter as thoroughly as possible within the author's ability. They are designed as study guides that direct the reader towards the central questions; provide references from which further information and viewpoints can be obtained; balance the arguments where, as it often is, a subject is controversial; and suggest ways in which the student might study the subject further. The structure of the units varies appreciably according to the dictates of the subject matter and the view of the author. But, in general, each is based on a notional common pattern: an introduction, explaining the aims of the unit, summarizing its content, and drawing the student's attention to the central questions, is followed by several sections each concentrating on one aspect of the subject. Each section comprises an explanatory

text at the end of which accompanying readings are listed. These readings are subdivided into 'essential' – a short list, without which any serious study is not thought possible – and 'optional' – a much longer list with references for further study of different aspects of the subject or for a more extensive study of the whole. As readings are not always easy to obtain, there is some deliberate duplication of references in the optional list. At the end of each section, a number of questions are listed as suggestions for students' reading, for use as essay titles or as topics on which to base seminars or tutorials. The preparation of essays or seminar topics may require reference to one or more of the optional readings.

There is a considerable variation in the length of the units, although there was a notional idea of length in constructing them. The underlying idea is that each unit should treat the subject in sufficient depth to occupy a student for about one-third or one-quarter of his total working time over a period of three weeks. But this depends clearly on what is considered to be sufficient and it also requires the teacher to select what to exclude, what to treat lightly, and what to concentrate on, to serve the purpose of the course. If all the materials offered and all the questions asked are pursued in depth then a course can be expanded to a much greater length.

Important considerations

There are two important considerations concerning the use of these units. First, just as it is important for a teacher to be involved in their use, so also is it important to maximize student participation. Not only is the student gaining new skills of selection, debate, condensation, and presentation, for which practice is essential, but he is moving into an area of study unfamiliar to many science students, where the subject matter is controversial; where there is disagreement about the data; where there are two or more rival theories, no one universally accepted; and where it is important to appreciate the complexity of the issues, the difficulty of decision-making, the conflicting interests of the different parties, and the vast network of connexions between different parts of a problem and between different problems leading to the 'trade-off' nature of any decision reached. It is vital to his understanding that the student participates very actively in the teaching/learning process. Some element of subjectivity is essential: the students must see themselves as involved – not necessarily the same thing as committed. One way of achieving this end is to devise projects, either for students working singly or (better still) in groups, based on some of the issues raised.

The second consideration concerns the reading requirements that form a large part of student participation. Reading material must be readily available and must either be selected from cheap editions that every student can reasonably be expected to buy, or be provided by the course organizers in sufficient quantity for students to consult or borrow. The readings are an essential resource of the course and thought has to be given to their adequate provision, just as in planning a laboratory/lecture-type course, the teacher must ensure that the necessary textbooks, equipment and materials are available.

Social aspects of science

There are so many variables in discussing how the social aspects of science can be incorporated into a science degree programme that the possible patterns are legion. The choice and range of topics are wide – philosophy, history, sociology, economics, science policy, resources, pollution, energy, ecology, literature, ethics, social responsibility, religion – and the list of areas of intellectual enquiry that have some

bearing on how science affects and is affected by society is very long. No student can be expected to become expert in all of them nor is it necessary that he should; what is desirable is that he should be made aware and that that awareness should be sufficient to colour his later professional outlook and behaviour. In shaping a student's undergraduate programme the criteria that must influence the choice and range of subjects include such factors as the quantity of material, a coherent collection of topics, apparent relevance to a student's other studies, and the existence of a linking theme or themes. And each of these criteria is itself a variable in the construction of a programme of study. Will social aspects of science be included in one, two, three, or four years of study? For one-tenth, one-quarter, one-half, or more of the student's working week? Or will the social and technical aspects of the teaching be so integrated that any such allocation is meaningless?

So that is where we are: that has been the main activity of the SISCON project. Over thirty units have been produced and several hundred trial copies of each circulated to universities, polytechnics, colleges of education, and many institutions of similar standing abroad. The first units are beginning to appear in a commercial form. It is too early to say yet whether we shall achieve the desired effect but it is clear that considerable interest and activity has been aroused. It is also clear that changes as radical as this at first degree level cannot take place without similar complementary changes in the school curriculum. But that is another story.

Trends 1978/1

The Service Children's Education Authority

Squadron Leader F. H. Parsons
Boarding Schools Advice Officer, SCEA

The education of the children of service personnel gives rise to special problems. This article describes the work of SCEA, the Service Children's Education Authority.

What have Admirals, Generals and Air Marshals to do with the education of children? It was Field Marshal Viscount Slim who wrote: 'Morale is that intangible force which will move a whole group of men to give of their last ounce to achieve something without counting the cost to themselves'* and in doing so he was restating an axiom that has been central to military thinking from the earliest times. Morale is a key factor in the efficiency of any fighting force. There are many factors that contribute to good morale but high on the list is adequate provision for a man's family. If a serviceman is worried about his family, his efficiency as a fighting man is likely to be impaired. For this reason commanders have sought to provide schooling for the children of their men ever since Britain formed a regular army.

Early history

The earliest recorded instance of an Army school was in 1675 when a school was set up for the children of the British garrison in Tangier. In 1768 we find a certain Captain Simes of the Queen's Royal Regiment laying down the responsibilities for his schoolmaster 'by whom soldiers and soldiers' children are to be carefully instructed in the three Rs.'† It would appear that the military authorities of those days were concerned not merely with the three Rs but also with what today would be called 'pastoral care'. The Royal Military Asylum, Chelsea, established in 1801, was a coeducational establishment, and in 1821 the Chaplain reported to the Commissioners that 'the usual precautions for keeping the children of each sex apart were not effectual and that further security had been adopted – a strong barrier wall and railing had been placed so as to form a complete and total separation between the two branches of the establishment. However, experience had proved that notwithstanding this barrier and the utmost attention on the part of officers and sergeants, it was found that the two sexes continued to elude their vigiliance'!† In 1769 the Royal Hibernian School, the first English boarding school to be maintained by public funds, was established in Dublin, and in 1812 Lord Palmerston, in presenting the Army Estimates, asked Parliament to authorize £20,000 to cover the expenses of the schools for soldiers' children. It is not generally realized that a system of education for the children of military personnel financed from the public purse was established many years before the State took its first faltering hand in the education of the nation's children as a whole.

* Field Marshall Viscount Slim. *Defeat into Victory*. London: Cassell, 1972.

† Col. St. J. Williams. *Tommy Atkins' Children*. London: HMSO, 1971.

The Service Children's Education Authority (SCEA) is the heir to that tradition. (Even though we no longer build 'strong barrier walls' to ensure 'the complete and total separation' of the sexes, they still from time to time elude our vigilance.) The organization of Service Children's Schools developed along single service lines until the mid 1960s by which time schools had been set up by the Royal Navy, the Army and the Royal Air Force all over the world wherever our men were serving overseas in significant numbers. These separate-service schools administered by uniformed education officers had similar objectives and many things in common. It was therefore decided to rationalize the whole system by creating a single professional tri-service authority that would deal with the building, staffing, equipping and running of all the schools. Thus in April 1969 SCEA was born.

Organization

The Headquarters was established as a part of the Ministry of Defence within the Directorate of Army Education but manned by education officers drawn from the three Services, the senior appointments being filled in rotation. Overseas authority is usually vested in the Commander of the locally largest Service; he is known as the Competent Authority and exercises control through his Chief Education Officer. In Germany, because of its post-war link with the Foreign Office and the large number of schools, there is a civilian organization, the British Families Education Service, with its own civilian Director who reports to the Chief Education Officer at Rhine Army Headquarters. The whole organization worldwide is funded from the Defence Vote.

Since 1969 Britain has withdrawn her forces from many territories, but nevertheless today SCEA still controls 126 schools and employs some 2,470 teachers who are responsible for educating more than 40,000 children. In terms of numbers SCEA is the equivalent of a medium-sized LEA in Britain but its area of operation is vast, stretching from Norway in the North through Western Europe and the Mediterranean to Hong Kong in the Far East. The main effort is concentrated in three areas – West Germany, Cyprus and Hong Kong – and in each of these we provide the full range of education from 5 to 18 years of age. The Authority operates a variety of infant, junior, first, middle and secondary comprehensive schools. In Gibraltar we run our own primary schools and parents may, if they wish, send their secondary age children to the comprehensive day schools run by the Gibraltar Government, but in all the other places abroad where we have schools (Norway, Belgium, Denmark, Italy, Sardinia, Malaysia, Brunei and Nepal) there is no secondary provision.

The long distances between SCEA schools and administrative headquarters is one of our major problems; another is turbulence. Children are constantly on the move as they follow their parents from posting to posting. In 1977 the number of movements in and out of our schools (45,879) exceeded the number of children in the schools (43,457). In an effort to compensate in some measure for this disruption, the pupil-teacher ratio in our schools is somewhat better than the average in UK-maintained schools, and so far we have been able to provide more generously for books and equipment.

Current practice

The curriculum, teaching methods and general approach to education in SCEA schools is based as closely as possible on LEA practice in the UK, our aim being to provide the same sort of schooling for our children as they would have had if their parents had been civilians living in a stable environment at home and they had been able to attend the local day school. A Careers Advisory Service is provided on

an agency basis by the Hampshire LEA which deploys officers full-time in Germany and sends others on periodic visits to SCEA secondary schools elsewhere. Youth Service facilities are also provided under the auspicies of SCEA in overseas theatres. We like to think that our schools have the edge on LEA schools: certainly we should be very worried if we thought they were generally not as good.

To ensure that our teaching staff keep abreast of educational developments in the UK and do not develop an insular mentality because of their geographical isolation, we arrange for HMIs, advisers and other experts to pay visits to our schools and teachers' centres, but we also attach great importance to the injection of new blood into the system. For this reason we do not offer a full career to our teachers. All our staff (apart from a relatively small number who are engaged locally overseas on a temporary basis) are recruited in Britain. They serve overseas on contract, initially for three years, but with certain restrictions these contracts can be renewed from time to time. Employment in SCEA schools is recognized by the DES as equivalent in all respects to service with a LEA. Heads in SCEA schools are given as much latitude in the running of their schools as they would have in a LEA school. Teachers are paid Burnham and London weighting, and a Foreign Service Allowance appropriate to the area where they are serving. We provide officer-standard accommodation, fuel and light or an appropriate rent allowance. All these factors, and the fascination of living abroad, combine to provide a quality of life superior to that enjoyed by teachers in many places. For men and women of initiative who are willing to accept the extra responsibilities and challenge associated with foreign service, we believe we offer interesting, rewarding and well-paid appointments.

Because of the wide geographical distribution of our schools overseas, it is impractical for SCEA to make special education provision for handicapped children in line with the practice in the UK. The serviceman must therefore avail himself of the provision made by LEAs in the UK – in most cases residential placement in LEA or independent special schools while the parents are overseas and day placement when the family is in this country. A Special Education Department of SCEA looks after the interests of all Service handicapped children who are notified to SCEA. Notification with the consent of the parents is part of the discovery procedure laid down by the DES. SCEA will advise and assist parents to secure appropriate education for their children and will assist with the travel arrangements when children join their parents overseas for holidays. Despite these facilities there are a number of handicapped children overseas. These will be those who are first discovered overseas, those who, although known to SCEA, have accompanied their parents on advice, those not known to us, those who are awaiting residential placement and, in a few cases, those who are taken overseas despite contrary advice. These children are given as much assistance as possible by the Schools Psychological Service which has three clinics in Germany, one in Cyprus and one in Hong Kong.

But by no means all Service children are overseas. There are more than 180,000 in UK day schools and about 20,000 in UK boarding schools. Although their education is not the direct responsibility of SCEA, the SCEA Charter directs the Controller to maintain close links with the DES and the LEAs so as to provide advice and to foster the educational interests of Service children in the UK who form a mobile section of the school population. To this end a Committee, on which are represented the Service Directors of Education, the DES,

the Scottish Education Department, HMI, the LEAs and SCEA, has recently been set up to further this aim. Some LEA schools that serve the main garrison areas contain more than 90 per cent of Service children, but close attention is being paid by the Committee to all LEA schools which have more than 10 per cent.

Continuity

One way of dealing with the turbulence resulting from mobility is to place a child in boarding school where he can receive continuity of education irrespective of his parents' movements. To this end the Treasury agreed in 1955 to the provision of a boarding school allowance which any serviceman can claim if he decides to adopt the boarding school solution. The amount paid is regardless of rank and goes towards meeting the additional costs involved. A similar scheme operates for civil servants and teachers serving abroad. Because the allowance is given solely to provide continuity, a parent may not transfer his child from one boarding school to another without a very good reason, except at the break point between primary and secondary education. It thus becomes a matter of vital importance for a parent to choose the right boarding school in the first place. To assist parents in making the right choice, SCEA maintains an advisory service to supply parents with information and assistance when selecting a school.

SCEA's remit is thus wide ranging and comprehensive, embracing, as it does, almost all aspects of children's education. Further education is not covered by our charter, but even in this field we help where we can. The facilities of many of our schools are made available after hours for adult instruction and we have just begun to introduce tuition for some of the City and Guilds examinations for post-16 pupils who are not academically inclined, but whose parents do not want to send them back to Britain at so young an age.

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What schools are for: an American perspective on the Green Paper

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The Sir John Adams Lecture, 18 October 1977. University of London Institute of Education.

The Sir John Adams Lectures are delivered annually, and now alternate between Los Angeles and London. Adams was the first Professor of Education in the University of London – he was appointed in 1902 – and the first Principal of the London Day Training College, which later became the Institute of Education. The ten years before his death in 1934 were largely spent teaching at the University of California at Los Angeles. The London lectures generally have an Anglo-American theme.

If economic exchange between the United States of America and the United Kingdom approached their level of cultural exchange, the economies of both would be vastly improved. Whether in art or drama or music or dance or film, mutual enjoyment of each other's contributions is substantial. This is somewhat surprising, given the belief among many here that the Colonies broke their ties with the Mother Country and the mother tongue simultaneously.

In education and schooling, a major United States' export throughout the first half of this century was the ideas of John Dewey. And so one can understand the surprise of British visitors on discovering in our schools more of Thorndike and Skinner than of Dewey. For our part, we in the United States better understood and more appreciated Dewey on visiting infant schools in Leicestershire and Bristol. My illustration merely confirms what some British educators believe – that Americans are unable to connect their practices with their theories. And, in the spirit of good dialogue, the American replies, 'Perhaps, but you won't acknowledge theory even when you are standing on one.'

Characteristic differences aside, we have a way of visiting our ways on one another and then having them come back again in somewhat different dress. In his Sir John Adams Lecture at UCLA a year ago, Cremin noted Adams' awareness of this transatlantic dialogue:* 'Unlike most of the other nations of the world,' Adams advised his countrymen, 'we Britons may face the prospect of Americanization with equanimity. It is, after all, a return of our own qualities upon ourselves, modified no doubt by the company they have kept in their exile, but at any rate not deserving of that repugnant adjective *alien*.'† It is in this enriching spirit of cultural commerce that I approach the

* Lawrence A. Cremin. 'Americanization: A Perspective,' *UCLA Educator*, 19, No. 1, December, 1976, p. 5.

† John Adams. 'The Two Americanizations,' *Journal of Education*, LXVI, 1932, pp. 538–39.

question of what schools are for, whether in the United States or the United Kingdom.

Although movements and concern for specific issues in Great Britain and the United States do not always match precisely in their timing and intensity, there frequently is a parallelism. This becomes apparent, once again, when one sets your recently released Green Paper in the context of contemporary criticism of the schools in the United States. A British educator, recently returned to the United Kingdom from a visit across the Atlantic, probably would report a back-to-basics movement '. . . against a background of strongly critical comment in the Press and elsewhere on education and educational standards. Children's standards of performance in their school work were said to have declined. The curriculum, it was argued, paid little attention to the basic skills of reading, writing, and arithmetic, and was overloaded with fringe subjects.'* However, the sentences quoted above are not from any imagined visitor to American shores but from page 2 of the Green Paper. And they refer to the background against which the Prime Minister, over a year ago, called for a public debate on education.

The Green Paper sets the agenda for this debate. It might as readily be used to summarize educational matters now being debated vigorously and sometimes acrimoniously on the other side of the Atlantic. I address myself to three of the four or five major issues common to the parallel debates now underway in both nations:

> The first is the duality of expectations as to whether the needs of society or of the individual should dominate in schooling.
>
> The second has to do with the accountability of schools and the standards to be applied to their performance.
>
> The third pertains to differing views of what education is, what should be taught and learned in schools, and how the educational process should be conducted.

These issues are hardly new; indeed, they are classic. They constitute three sub-questions of the parent question of what schools are for: What are schools expected to do? What do schools do? What should schools do? I shall deal with aspects of all three.

The setting for the debate is now very similar in both countries. School populations are on the decline; a period of organizational and curricular reform appears to be at an end; there is a certain weariness with words such as change and innovation; improving the economy is a pervasive concern; and there is growing recognition of global interdependence. In this context, the debate is at two levels. One is rather extreme, at times hysterical, and is to a degree stimulated by the Press. Carried to conclusion, it could set our schools back several decades in a drive for simple solutions to very complex problems. Fortunately, there is a second, more rational level, illustrated by the contents of the Green Paper and reports in the United States, such as that recently released by a panel exploring reasons for a 14-year decline in Scholastic Aptitude Test scores. Instead of recommending that we turn back the clock in regard to the conduct of schooling, the panel stated: 'We do not read the SAT score decline as an instruction that education in this country must be more rigid, more selective, more rejective, more uniform. Instead, the instruction is that education, especially secondary

* Secretary of State for Education and Science and Secretary of State for Wales. *Education in Schools: A Consultative Document*. Cmnd. 6869. HMSO, 1977, p. 2.

education, must become still more diversified, more varied – but without being watered down.'*

The warning is clear. We must be careful, in seeking to make some adjustments in the ends and means of schooling, not to set in motion forces that will return us to the dry, sterile forms of education we strove to eradicate on both sides of the Atlantic during the 1960s.

What schools are expected to do

One does not find out what schools are expected to do by raising philosophical questions. Goals for schooling emerge through a socio-political process in which certain sets of interests prevail over others for a period of time. There are client-perceived wants and needs, professional determinants, pervasive interests of the citizenry in teaching a common culture, expectations of colleges and universities, the economic interests of business and industry and of the nation as a whole.† These usually are kept in some sort of functioning balance until powerful forces such as a declining economy or perceived excesses in prevailing practices precipitate special enquiries: White Papers, Black Papers, Green Papers, reports of Presidential panels, and the like. These are usually preceded and accompanied by marked shifts in the rhetoric of local community discussion about schools.

Almost invariably, there is visible movement away from some traditional goals and towards others, giving rise to sardonic remarks about 'the swinging pendulum' of educational fashion. What ten years have wrought in this country is intriguingly revealed in the differing language and substance of the Plowden Report (1967) and the recently released Green Paper (1977). The former reflected the child-centred philosophies, theories and educational models of Pestalozzi, Froebel, and the McMillan sisters which had guided the English heritage in nursery school education,‡ aspects of the progressive education movement in the United States, and the essence of extant innovative thought in both countries. There is no question that the Plowden Report was a reaction against more rigid, conservative views perceived to have prevailed in preceding decades. Parents who were children in the war years were ready for it.

But times are different in 1977. There is growing suspicion that '. . . the basic skills of literacy and numeracy, the building blocks of education, have been neglected.'§ The most strident critics charge that there has been a general decline in educational standards. All of this provides a kind of rhetorical justification for a shift in the classic duality of educational purpose – from less stress on developing self-realization and individual talents towards greater stress on 'the needs of this new Britain'. The language of the Green Paper is clear: '. . . only a minority of schools convey adequately to their pupils the fact that ours is an industrial society – a mixed economy; that we depend upon industry to create the wealth without which our social services, our education and arts cannot flourish; and that industry offers scope for the imagination and even the idealism of young people.'¶ One side of the duality, one set of interests, has prevailed temporarily over the

* *On Further Examination.* Report of a special panel of the College Entrance Examination Board, Princeton, New Jersey: College Board Publications, 1977.

† Joseph J. Schwab. 'What drives the schools?' Paper prepared for the National Institute of Education, 3 November 1976 (mimeo).

‡ Norma D. Feshbach, John I. Goodlad and Avima Lombard. *Early Schooling in England and Israel.* New York: McGraw-Hill, 1973, p. 27.

§ *Education in Schools: A Consultative Document,* p. 2.

¶ *Ibid.,* p. 4.

other side and over other interests. Competition among interests becomes more intense when resources available for education decline.

One can trace almost precisely parallel shifts in the United States. We went from the decline and discrediting of progressive education (the Progressive Education Association closed its doors in 1955) in the early 1950s; to emphasis on a 'harder and tougher' education following Sputnik (1957); to widespread appeal for greater openness and flexibility in the conduct of schooling in the mid-1960s; to alarm over declining scores on the Scholastic Aptitude Tests (widely used in selecting applicants to colleges and universities) by the mid-1970s. The cycle described as taking place in the United Kingdom over a decade occurred twice in the United States over two decades.

It appears that, in both countries, two modes of thought struggle for dominance over the conduct of schooling. William James characterized them as 'the hard and tough' on one hand and 'the soft and tender' on the other.* The distinctions between the two, although overdrawn, are intriguing and have captured the attention of scholars to the present time. It is easier, however, to make the distinctions in theory and concept than in practice. Indeed, because the two modes are descriptive of the human character itself, whenever we encounter the one, rest assured that the other is not far behind.

So far as the rhetoric of schooling is concerned, these two themes rise and fall like tides, one depositing its flotsam on the beach as the other gathers itself for the next onslaught. A wave may change the appearance of a beach but it takes many to change the shape of the shoreline. Likewise, educational waves come and go, with the changes made in practice falling far short of the accompanying noise. This probably is a good thing because little of a sound nature would be built and maintained if we allowed our accomplishments to be washed out every ten years.

Recent studies suggest that most people in the United States are reasonably agreed on what our schools are for.† I am inclined to believe that comparable agreement exists in the United Kingdom. For us, these goals emerged more or less in sequence over a period of three hundred years. They may be placed conveniently in four categories: 1. early emphasis was on sufficient schooling to learn the principles of religion and the laws of the land (the 3 Rs); 2. later emphasis was on sufficient schooling for entry into the labor force, the amount deemed necessary increasing very slowly until the second half of the nineteenth century and then increasing rapidly in the twentieth (an extension and broadening of the 3 Rs); 3. still later, emphasis was on socialization and participation in a complex society; 4. finally, emphasis on the person became established with the other three only recently.

The first three of these reflected a pervading sense of educating for responsibility – to the economy, to the nation and to God. It was the continued domination of the moral and nationalistic over a period of 250 years that made John Dewey's emphasis on the meaning of individual human experience so dramatic. Cremin interprets Dewey's definition of education – the reconstruction and reorganization of experience – as '. . . a way of saying that the aim of education is not merely to make citizens, or workers, or fathers, or mothers, but

* William James, *Pragmatism*. New York: Longmans, Green & Co., 1909.

† See, for example, Ronald G. McIntire, 'The Development of a Conceptual Model for the Selection of Optional Educational Programs in an Elementary School', unpublished doctoral dissertation, University of California, Los Angeles, 1976.

ultimately to make human beings who will live life to the fullest.* Since the late 1930s, virtually every national educational commission and every set of goals issued by our state governments have included, in some form, the development of the self as an approved, legitimate goal for the schools. We have yet to match our rhetoric with our deeds. Here, in the United Kingdom, the Plowden Report made clear that the time was right for squaring school practices with such an educational goal.

Where do both countries stand today regarding their commitment to the dual goals of education for responsibility and education for development of the person? A *short* visit to the United States would suggest that we are diligently pursuing only the first three of the four sets of goals, that we are suffering pangs of guilt over excessive progressive innovation and change during the 1960s, perceived by many people to have been excessive. 'Back-to-basics' has become the battle cry for educational reform; state legislatures are endeavouring to define basic education; and the programs of educational conferences faithfully reflect prevailing weather conditions with respect to schools. More and more state officials are demanding proficiency tests, initially as a requirement for graduation from secondary schools but increasingly as a condition for grade-to-grade promotions.

But before hurrying home to report that Americans are using Dickensian schools as exemplary models of dehumanized excellence, a longer, deeper look might be the better part of wisdom. First, it should be noted that the expansive period of educational reform in the United States reached its zenith a decade ago. The innovations taking place after 1967, such as 'open' schools, were at the outer edges of acceptable change and not likely to lead to widespread adoption. The seeds of the back-to-basics movement were being planted; they sprouted and were flowering in profusion by 1973. If the ten-year cycle concept referred to earlier has any predictive value, then the back-to-basics movement is at its zenith and the roots of a counter-movement already are firmly embedded in what could be nourishing soil.

In the interests of educational fashion alone, the time is right for a new dress or line of cosmetics. But some less ephemeral considerations deserve attention. The fabric of court-ordered integration of schools has held. So-called magnet schools offering a range of alternatives available before only in a few affluent school districts are springing up in urban settings where school-by-school integration is difficult to accomplish. And a new federal bill requires local school development of relatively individualized programs tailored to the special learning needs of handicapped children. It takes no great amount of imagination to envision a day when children and youth will use not just the schools but all the resources of the community in securing their primary and secondary education. What progressive educators were unable to accomplish through rational persuasion, the courts appear to be accomplishing through the law. As a consequence, the great variability in the abilities, needs and problems of young people is, to a degree, being recognized in the provision of educational alternatives.

There are signs, too, that the narrow and, I think, misguided approach to accountability that has dominated the American scene for some years will suffocate in its own excesses. Over the past decade, we have moved through competency-based teacher education, teacher

* Lawrence A. Cremin. *The Transformation of the School.* New York: Alfred A. Knopf, 1961, pp. 122–23.

accountability based on behavioural objectives and, most recently, proficiency tests for students, without providing any evidence of improved performance on the part of the target groups. Indeed, we might more readily blame perceived inadequacies in the schools on this accountability movement than on excessive innovation. Whereas evaluation on the basis of performance objectives and proficiency tests has been declared mandatory in some states, there is considerable doubt as to whether the much-lauded 'progressive' reforms of the '60s were implemented in more than a few schools and school districts.

Perhaps the strongest indication that the back-to-basics movement has about run its course in its present form is the difficulty state legislatures are having in seeking to define basic education. To their surprise, they are finding that most parents want much more than reading, writing and arithmetic for their children, even though they want these fundamentals assured. They conclude that today's young people must know a good deal about their environment, must acquire some global understanding, and must have opportunities to develop their artistic talents and personal potential. Parents want all the educational goals to which our society is committed. Interestingly, 57 per cent of the citizens questioned in the recent Gallup poll on the condition of our schools had never heard of the back-to-basics movement.*

Although I have grounds for believing that the current wave is about to spend itself on the beach, I am depressed by our chronic inability to break through, for any appreciable period of time, that heavy curtain of restraint and narrow, cautious vision that infects our view of what schools are for. We stray only a short distance, and then nervously and hesitatingly, from the notion that schools are intended to be rather sober places diligently preparing us for lives of work and coping. Our stated commitment to education of the person always is on trial and always viewed with suspicion. But, to quote Stephen Bailey, 'Surely, the educational system has no higher function than to help people to have creative engagements with the world of the free self.'†

The question about which I am curious is: How fares education of the free self in the schools of the United Kingdom? Much of the language of the Green Paper leaves me discouraged. The eight aims set forth for schools are oriented more to work and coping than to the world of the free self, which, with '. . . its felicitous admixture of playfulness, concentration, and socializing can affect, infect, and help to liberate the worlds of work and coping.'‡

Paralleling the American interest in defining basic education, the Green Paper stresses a need to determine a 'protected' or 'core' element of the curriculum common to all schools which, if properly worked out, '. . . can offer reassurances to employers, parents and the teachers themselves. . . .'§ In spite of caveats regarding the limitations of standardized tests, the matter of accountability of schools is treated almost precisely from the perspective and language of the performance-by-objectives accountability movement in the United States. Those external examinations which, you assured us, were non-existent or

* George H. Gallup. 'Ninth Annual Gallup Poll of the Public's Attitudes Toward the Public Schools', *Phi Delta Kappa*, 59, No. 1, September 1977, pp. 33–47.

† Stephen K. Bailey. *The Purpose of Education*. Bloomington, Indiana: *Phi Delta Kappa*, 1976, p. 61.

‡ Loc. cit.

§ *Education in Schools: A Consultative Document*, p. 11.

on their way out a short time ago, appear to be on their way back in. If the Green Paper may be interpreted as portending school practices to come, then it would appear that the hard and tough is at center stage and the soft and tender must lurk in the wings.

I am sure that the debate called for by the Prime Minister is in full swing. Imagining England and Wales without lively educational debate at all times is akin to imagining the United States without advertising at any time. Whatever the arguments of this debate, however, I have little doubt that the general thrust of educational change in the United Kingdom for several years to come will be toward remedying what the Green Paper refers to as 'justified anxieties'. How much of our present folly you will import in the process, and how much of both yours and ours will return to us, remains to be seen. Whatever the cultural exchange, I am confident that those many advocates of the soft and tender will be out of the wings and sharing center stage in both countries in just a few years.

What schools do and should do

Having participated in two complete cycles of the recurring debate, I find myself less attuned to the alternating rhetoric than to two serious, substantive omissions, whether the context is the United Kingdom or the United States. First, diagnoses producing the 'justified anxieties' are vague and devoid of the data required to give them scientific credibility. Second, both the intuitive insights into sound human development derived over the centuries, and the conditions for productive learning derived from relatively recent scholarly enquiry, are virtually ignored. These omissions contribute significantly to the either-or, and often non-cumulative, character of the debates and to the dominance of political over educational considerations in seeking solutions to complex human problems.

The so-called curriculum reform movement beginning in the United States in the late 1950s, and fading in the late 1960s, was based on little or no knowledge of what was then being taught, how it was being taught, or how time was being spent in schools. The recommendations for reform were equally devoid of knowledge about how proposed changes might be received and effected by teachers and of plans to evaluate their implementation and effectiveness. The current back-to-basis movement rests equally on an array of dangerously naïve assumptions, and no consideration of the probability that most of our elementary schools never stray far from a narrow, traditional curriculum. Current proposals for reform run counter to most of the conditions deemed necessary for effective learning.

Perhaps it is easier to know at any time what goes on in the schools of England and Wales than it is to secure similar information about schools in the United States. At any rate, the Green Paper skilfully turns aside some of the most serious charges while accepting some of the others as appropriate and well-placed. I am inclined to believe that there is little evidence to commend one set of criticisms over another or any countervailing set of descriptive arguments in defense of schools. In the United States, we are preoccupied with standardized test results to the point of ignoring the fact that they tell us nothing about what goes on in schools and very little more about the effects of schooling.

The little we have learned about the conduct of at least primary or elementary schooling in the United States over the past two decades suggests to me directions for reform quite unlike what are implied in the rhetoric of back-to-basics. First, most of the instructional time appears to be focused now on reading, the language arts and mathe-

matics; there is little attention to the arts; and social studies and such science as is taught are largely language arts with different subject-matter. There is relatively little individualization of instruction, a great deal of time being spent on telling and questioning the total class. The range of instructional techniques used is narrow; the range of instructional materials used is limited. Methods of inquiry and discovery-learning and innovations such as non-grading and team-teaching are hard to find. What comes through in these findings is that, so far as the curriculum, methods of instruction, and school and classroom organization are concerned, the elementary school we now have may resemble very closely that school of yesterday nostalgically desired by many people today.*

Before I move on with some other threads of research, let me emphasize the point that we know precious little about our schools. They are, in scientific terms, largely unstudied phenomena. Several colleagues and I have spent over four years in conceptualizing the component parts of an inquiry into the conduct of schooling; formulating critical research questions; translating these into items for questionnaires, interviews and observations of teachers, administrators, students, parents and others; and gathering data in a sample of elementary and secondary schools.† We expect our findings to provide many new insights into schools but, perhaps more important, we hope that the study will draw attention to the need for hard data about each aspect of schooling prior to diagnosis and subsequent action.

Other scattered studies of what goes on in schools‡ suggest to me that there are certain endemic problems which effectively resist cycles of reform previously described. Attention to these problems would be well-placed whether the current rhetoric of discontent addressed the 3Rs, preparation for economic self-sufficiency, socialization and civic responsibility, or development of individual talents and the person. My bits of evidence are derived entirely from the United States; you will have to decide for yourselves whether the shoe fits.

Briefly, my thesis is that an extraordinary amount of what goes on in schools simply does not engage the individual in meaningful encounters with his civilization. We know relatively little about the meanings acquired in schools by children and youth; this is a particularly promising arena for enquiry. Much of school is a separation from life, not life itself. Since so much of it is justified as preparation for something else, school is instrumental to and not, therefore, the 'real' thing. Overcoming these virtually built-in deterrents to learning is so formidable, so demanding of energy and creativity on the part of teachers, that only a handful of schools emerges to provide a glimpse of what education is and should be – a handful often smothered by the onslaught of visitors, and so pressed to hang on to what they achieved that they ultimately become moss-laden anachronisms.

The imaginative powers of children are only too rarely challenged; most instruction elicits only low-level cognitive processes; the possibilities of play are tapped only in the early years and then at a relatively

* For these and other findings, see John I. Goodlad, M. Frances Klein and Associates, *Looking Behind the Classroom Door*. Worthington, Ohio: Charles A. Jones Publishing Co. 1974.

† A Study of Schooling in the United States, supported by several philanthropic foundations and conducted under the auspices of the Institute for Development of Educational Activities, Inc. (Research Program located in Los Angeles, California.)

‡ For a brief summary, see John I. Goodlad, 'What goes on in Our Schools?' *Educational Researcher*, 6, No. 3, March 1977, pp. 3–6.

superficial level; the learning of concepts is approached usually from one instead of several senses; pupils are 'on-task' at best only about 30 per cent of the day and, at worst, perhaps as little as 15 per cent; teachers devote up to 40 per cent of their time to management routines and maintaining order or control. Too few teachers are passionate about their calling; too many students never get a glimpse of what a passion for learning is all about.

The schools for which some people are nostalgic were created to do a relatively simple job for just a few years in a child's life. Although what is asked of them today is extraordinarily complex and the length of time to be spent there has been vastly extended, our concepts of schooling, the setting in which it is to occur and the regularities by means of which it is to be conducted have changed very little – in spite of the expanded curriculum and a host of other highly visible changes. Tinkering with the curriculum, seeking to assure common learnings from school to school, tightening up standards, employing external examinations and juggling some elements of teacher education will do little to increase satisfaction with schools or improve their performance on even the limited criteria by which they are now judged. And, certainly, few of these will get to the problem of how young people are to be meaningfully involved with their civilization throughout most of eight or twelve or sixteen years of schooling.

I have grave reservations about the usefulness of the debate now going on in the United States, beyond the necessary reminder that both the soft and tender and the hard and tough constitute the human character and condition. Teachers and teaching will be largely unaffected by it. There will be, I fear, a tendency to move toward an even more limited, restrained educational program simply because it is easier than individualizing, using enquiry techniques and engaging the child in his own becoming. We merely postpone the search for answers to questions such as the following:

1. What are schools now doing and, specifically, what is this school in this community doing?
2. What would balanced, comprehensive school programs look like if they assured attention to all four sets of goals to which we have stated commitment?
3. To what extent do collections of schools and particular schools now reflect these goals in their programs?
4. What kinds of infrastructures and assistance do schools in general and these ones in particular appear to need if their programs are to be more comprehensive and better balanced in relation to these goals?
5. What teaching procedures are in use and to what extent do these reflect our present understanding of how learning proceeds and is enhanced?
6. How do students perceive their teachers and school programs? What turns them on? What role do they wish to play in determining the course of their lives in school?
7. What do parents and others in the community perceive the school to be doing? How do their perceptions compare with the perceptions of teachers and students?
8. How might parents, teachers and students be brought into a more productive collaboration for improving the school as a place to live, work and study?
9. What use does the school make of the community in seeking to provide meaningful learning?

These are more than enough questions to imply what I am driving at. We need an informed debate, not just one more struggle between simplistically stated, conflicting ideologies. We need to become aware of the nature and extent of the agenda required to bring our schools productively and meaningfully into the concluding decades of the twentieth century. The tasks are formidable.

A national debate cautions us against parochialism. But the ultimately productive debate proceeds school-by-school and community-by-community and is enlightened most by knowledge about a particular school. Ultimately, we must decide whether the school is to take on a very limited set of strictly academic functions for a few hours a day; or whether it will extend itself into the larger community and share with other institutions in vocational and citizenship education; or whether school is to become a concept as large as education itself, so that schooling becomes a 24-hour-per-day concept of educating the whole person.

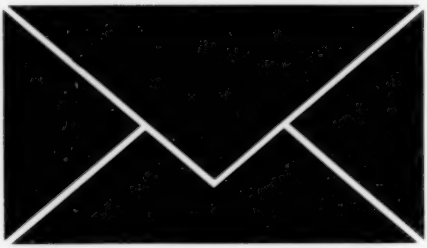
Of one thing I am convinced. If we continue with an eighteenth-century concept of schooling into succeeding decades, and set for schools four sets of educational goals as well as a host of custodial and other social functions, our disaffection with schools in 2000 A.D. will far exceed the disaffection expressed in 1977. And this will be so whether we pass through only one or two more cycles of the hard and tough as opposed to the soft and tender.

To debate is great fun. But along the way must emerge a realization of the complexity and seriousness of the problems we jointly face, a body of relevant data far beyond any assembled in the past, and a clear vision of what schools would be like if they seriously engaged the interests, abilities and attention of those who attend them.

Our schools never will match our rhetoric; nor will they solve the troublesome extant problems of our respective societies. What they can do and should do, however, is to engage the self most of the time in that which is worth learning. The aims for such education are more likely to emerge out of an image of the good person than the contemporary wants of a troubled society. What would we have the person be?

'We would have him be a person with a strong sense of himself and his own humanness, with awareness of his thoughts and feelings, with the capacity to feel and express love and joy and to recognize tragedy and feel grief. We would have him be a person who, with a strong and realistic sense of his own worth is able to relate openly with others, to cooperate effectively with them toward common ends, and to view humankind as one while respecting diversity and difference. We would want him to be a being who, even while very young, somehow senses that he has the capacity for lifelong spiritual and intellectual growth. We would want him to cherish that vision of the person he is capable of becoming and to cherish the development of the same potentiality in others.'*

* 'The Future of Learning: Into the Twenty-first Century,' Forum No. 5, *Report to the President, White House Conference on Children*, 1970, p. 78. Washington: Government Printing Office, 1971.



Letters

Mount Grace High School
Hinckley
Leicestershire

Dear Sir,
I read with great interest the recommendations of your contributors to the in-service issue of *Trends* (Autumn, 1977).

I have been involved in many aspects of in-service training for the last fifteen years, including the canvassing of teachers to discover their views about what the provision should be. What has been evident to me is that whereas there is a consensus view about the need for the service to expand, there are very few clear ideas as to how it should expand and what it should offer. It is also true that, with the plurality of providing agencies, the co-ordination of activities offered is a major problem, and individuals quite often do not get information or advice in a way that is useful to them. I agree that the evaluation of courses is necessary, but I suggest that the techniques suggested by Peter Taylor would lead to the rearranging of existing activities rather than making them more relevant to the school situation.

For many reasons, economic as well as educational, it is now suggested that an increasing amount of in-service provision should be school-based: this is where I would like to enter the discussion and pick up Pauline Perry's dynamic model of professional development and Jack Chamber's concept of a staff development programme, for only schools can effectively translate the knowledge and experience gained through in-service activities into practical realities. In saying this, I am not denigrating the essential and valuable contributions made by the other agencies involved. Indeed, they have been the major factors in the development of in-service training programmes, but they suffer from the same drawback; they are external to the schools and classrooms. Their specialist help is crucial, but any teacher who embarks upon an in-service activity must feel that he or she is involved both in personal development and in contributing to the growth of the school.

How often has a teacher returned from a course only to find that he or she cannot implement the new-found expertise or, perhaps, even discuss it? I am convinced that the answer lies in the provision of school and staff development programmes which give opportunities for everyone to participate and for senior staff to be seen playing a positive role in helping colleagues to develop professionally and personally. For this to happen many existing senior staff will need to be persuaded of the worth of such programmes and be given the tools with which to set them up. To achieve this, there has to be a top priority provision of appropriate DES and LEA courses.

All teachers need to feel that their aspirations are recognized and, in part at least, realized, and that there is a forum by which they can enjoy a dialogue with their colleagues – with whom they are able to join in exercises that will be both meaningful to them and relevant to their teaching situation.
Yours faithfully,
G. W. Alsop
Senior Master

Department of Library and Information Studies
Loughborough University
Leicestershire

Dear Sir,
Don Rogers asks if I favour an education qualification for school librarians. The four-year degree for which I am course tutor produces a regular supply of people doubly qualified as both teachers and librarians, and my wife and I are undertaking a survey into such doubly qualified people. Mr Rogers will know that the Bullock Committee report *A Language for Life* commended double qualification.

I am informed, however, that the promotion of further courses for double qualification is not at present DES policy. One must therefore distinguish between, on the one hand, the practice of library-oriented teaching and, on the other hand, the provision of a professional library service within a school. The former can be undertaken by any qualified teacher, and schools are well-

endowed with them. A prior essential, however, is internal library service based on the careful analysis of user needs typical of the fully qualified librarian.

Over 500 such librarians at present work in British schools, in counties as different as Cheshire, Nottinghamshire, Inner London, Somerset and Bedfordshire. Many other schools tell me they would like to employ them. I know of no evidence whatever that their work, as a group, is in any way inferior to that of any available alternatives (nor am I clear by what methodology one would be able to prove it). There is much evidence that teachers and pupils alike are stimulated by the quality of support service offered.

Moreover, as their future career is likely to remain within educational librarianship (in schools, colleges or the public library schools service) they have every incentive to maintain and develop their understanding in this crucial field. For teachers taking over libraries, there is no such career incentive; every pressure on them will be either towards higher administration or back to the classroom, in other words away from the library.

Yours faithfully

Norman W. Beswick

Senior Lecturer and Course Tutor,
BA in Education and Library Studies

INTERNATIONAL EDUCATION

British Teachers Overseas

In the developing countries of the world there are still about 4,000 British teachers who are supported to some degree by the Government of the United Kingdom. And there are thousands more who serve the developing world without such official support.

Those who have government support are recruited in a variety of ways – by the Ministry of Overseas Development, by the Inter-University Council, by the Technical Education and Training Organization for Overseas Countries, by the British Council, through the British Volunteer Programme, and by High Commissions in London, such as those of Zambia and Nigeria. But all those recruited in this way have one thing in common; either wholly or in part they are supported by the British taxpayer.

Four or five years ago the number of such teachers serving overseas was very much larger, perhaps 7,000 or so. The number has declined partly because of a deliberate policy of replacing them with native-born teachers, partly because of the development of training facilities overseas, partly because of difficulties in recruiting teachers in some subjects, and partly because of events in the developing countries themselves. On the other hand, the education systems of many developing countries have been expanding greatly, and although one might have expected some pressure from those countries for a withdrawal of British teachers, such pressure has rarely been applied; indeed, some developing countries are requesting more, not fewer, British teachers.

The kind of teacher recruited has also changed. Some years ago it was quite common for British teachers to be found in the primary schools of developing countries but they are rarely found there now. British teachers are less common in the lower levels of secondary schools than they once were; they are more often to be seen teaching the O-level classes and, in some countries, A-levels. Although in the recent past it was common to find British teachers teaching everything from religious knowledge to physical education, they are now more likely to teach English, mathematics, the sciences, and commercial and technical subjects. British lecturers are common in teacher training colleges and various forms of technical institute. A few are working in curriculum development, educational administration, inspection, schools broadcasting and the like, and a growing number are specialists and advisers and textbook writers in English language teaching. In the main, British teachers are being recruited more and more to teach 'developmental subjects' for the upper levels of secondary schools, for teacher training colleges, and for a wide range of specialist tasks.

The number of British lecturers in universities is also falling, though they are still very much in evidence overseas; it is not unusual even now to find in some universities forty or fifty British lecturers on the staff – many more than any other single nationality. More and more they are being concentrated in the teaching of 'developmental subjects' – though at this level there is a great deal of discussion about exactly what constitutes a 'developmental' subject. Increasingly, British lecturers are occupying posts at middle and senior levels.

It is, as I have said, deliberate policy to reduce the number of British teachers as native-born teachers and educators gain experience. Even so, there will be for many years to come a demand for specialist teachers and teacher educators in such subjects as English, mathematics, the sciences, and vocational subjects; I can see a continuing need for teachers in technical institutes; I can see too a role for some specialists in areas such as curriculum development, non-formal education and schools broadcasting, though the numbers will probably be small.

One thing is clear: whatever disagreements we in the United Kingdom may have about our education system, there is still overseas a respect for aspects of that system, and there are still many people in the developing countries who turn first to Britain for assistance of the kind I have described.

W. A. Dodd
Chief Education Adviser
Ministry of Overseas Development

Council of Europe symposia

The last of four symposia to consider various aspects of pre-school education in Europe was held at Storlien in Sweden in September of last year. This meeting, which was concerned with the pre-school education of children living in sparsely populated areas, was organized in a similar way to the previous three which were held respectively in Venice, Versailles and Bournemouth. The main object of the meeting was to frame recommendations to the Council of Europe about pre-school education; these recommendations were the result of papers presented by three working groups, one French-speaking, one English-speaking, and one bilingual.

In addition to these working groups, specialists from different nations presented papers and showed films. Perhaps one of the most interesting parts of the symposium was visits that were made to the schools in the host country. Storlien is a tiny village high in the mountains near the Norwegian frontier and bordering on Lapland. In this sparsely populated area there are children of Lapp families who can receive education only by living in a boarding school weekly or fortnightly. The parents of these children live in Kata – wigwam-like tents heated by a central open fire – and follow the reindeer herds over the mountains.

The school I visited is situated on a mountainside overlooking the lake and takes about thirty children. The crafts of the Lapps, working in reindeer horn, coiled-wire embroidery and leather work, are encouraged, and the children sing the songs of their own people. All the teaching takes place in Swedish and the children learn to read in Swedish because, we were told, no books are published nor is there any written literature in Lappish. Only one of the teachers was a Lapp. The children were happy, lively and ebullient, and were accommodated in colourful small dormitories of two or three beds. The living accommodation was quite separate from the school and the 'house mother' was not involved in the teaching.

The pre-school establishments I visited were all under the auspices of the social services, and were lavishly equipped with toys, large and small apparatus and books in rooms that were carpeted and curtained in brilliant colours. Attendance at nursery school is voluntary and a small charge is made, but the majority of mothers are anxious for their children to attend, and they sometimes travel long distances to get their children to school. Occasionally there is a pre-school group attached to a primary school, and in one of these classes the teacher (a young man) travels between two schools running part-time classes with an unqualified assistant to help him.

A general document reporting the recommendations made in these four symposia is being written by Mr Martin Woodhead and should be published later this year.

Rosemary W. Peacocke

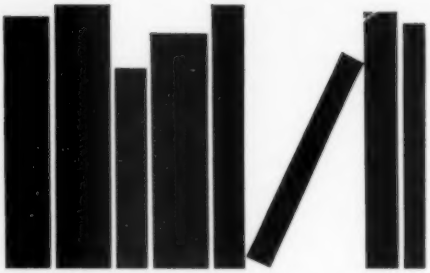
Basic education statistics

Public Sector in England and Wales and Universities in Great Britain

		1966–67[1]	1974–75[1]	1975–76[1]	1976–77[1]
Schools					
Nursery:	Number of schools	464	612	631	648
	Number of pupils (thousands)	29	48	50	52
Primary[2]:	Number of schools	22,831	22,280	23,353	23,364
	Number of pupils under 5 (thousands)	211	400	438	425
	Number of pupils aged 5 and over (thousands)	4,298	4,794	4,727	4,660
	Pupil/teacher ratio[3]	27·9	24·2	23·9	23·8
Secondary[4]:	Number of schools	5,729	5,035	4,982	4,988
	Number of pupils (thousands)	2,833	3,827	3,936	4,039
	Percentage in comprehensives[4]	14·4	69·7	75·6	79·9
	Pupil/teacher ratio[3]	18·2	17·2	17·0	17·0
Special:	Number of schools	797	1,489	1,505	1,541
	Number of pupils (thousands)	69	123	125	127
School leavers:	Percentage with				
	No GCE or CSE attempts	49·0*	18·0	15·6	14·2
	5 or more higher grade O-level/CSEs[5], but no A-levels	8·0	9·0	9·0	9·2
	2 or more A-levels	11·8	12·2	12·7	12·4
Teachers	Full-time in maintained nursery, primary and secondary schools	295,948	419,999	432,014	436,296P
	Full-time in further education colleges[6]	46,161	70,147	72,595	73,091P
Major establishments of further education[7]					
–total enrolments (thousands)		1,801·3	1,949·8	2,031·1	1,922·0
of which					
Full-time and sandwich		286·8	437·8	486·2	501·2
Part-time day		711·9	726·9	743·3	702·6
Evening only		802·5	785·1	801·6	718·2
Percentage of full-time and sandwich students in polytechnics		..	18·9	20·1	22·7
University students in Great Britain (thousands)[8]		184·2	250·6	261·3	271·8
Open University students in United Kingdom (thousands)[9]		.	53·8	56·0	61·2
Participation in full-time education[10]					
(as a percentage of age group)					
2–4 school[11]		11·0	21·8	24·7	25·7
16–18 school and further education college[12]		22·9	35·6	36·1	37·8
19–20 further education colleges[13]		4·2	8·2	8·1	8·8
universities		4·5	6·5	6·6	6·7
Expenditure[14]					
Total: at constant (1977 survey) prices[15] £million		4,540	6,605	6,706	6,746P
as percentage of Gross National Product[16]		4·7	6·3	6·4	6·3P

[1] Academic year. [2] Including middle deemed primary schools and immigrant centres. [3] Ratios take account of the full-time equivalent of part-time teachers and count each part-time pupil as 0·5. For 1974–75 *et seq* only qualified teachers are included. [4] Including middle deemed secondary schools. [5] O-level grades A–C and CSE grade 1. [6] Maintained and assisted colleges only (including former colleges of education). [7] Maintained assisted and grant-aided. [8] Full-time students only. [9] Undergraduate, postgraduate and post-experience. [10] In maintained, direct grant and independent establishments. [11] Each part-time pupil counted as one. [12] Including teacher training colleges and universities. [13] Including teacher training colleges. [14] Financial years data. [15] England and Wales. [16] United Kingdom public expenditure on education (including school meals and milk) as a percentage of GNP at market prices. P Provisional. * Estimated.

Detailed statistics of education (in seven annual volumes) are on sale at HMSO bookshops. Summary statistics (facts cards) relating to each of the seven volumes are available free on request from the DES Statistics Branch (Telephone 01–928 9222 ext 2776).



Book Reviews

Monitoring national standards of attainment in schools

Ray Sumner (editor)

NFER £12·00 paperback

This book comprises an edited collection of papers presented to the first European Contact Workshop at the Council of Europe held at Windsor in June 1976. The purpose of the workshop, which was organized by Dr M. J. Tyerman, was to discuss ways of finding and comparing the educational outcomes and standards attained by the variety of different curricular approaches and philosophies adopted in the West.

The work of the conference covered a number of issues, strategies and teaching problems associated with monitoring procedures, and the countries represented included Belgium, Cyprus, Denmark, England, France, Ireland, Sweden, Switzerland, Wales and West Germany.

Papers were presented by L. K. Allal (Switzerland), C. Burstall (NFER, England), J. Cardinet (Switzerland), B. Choppin (NFER), A. N. James (NFER), B. W. Kay (DES, England), T. Kellaghan (Ireland), G. Pollock (Scotland), B. Rodmell (DES), H. Scheiblechner (Germany), M. Seibel (France), R. Sumner (NFER), I. Wedman (Sweden) and A. S. Willmott (NFER).

This valuable collection falls into two quite distinct categories. The first set consists of clear, readable general discussion documents about monitoring and the issues to which it gives rise. The second set is highly technical and demands considerable sophistication and statistical knowledge from the reader. In some ways they might have benefited from publication in two volumes, particularly in view of the price of this combined volume.

As it is, we have a mixture of the two types which includes general surveys such as the ones by B. W. Kay on 'Monitoring: Purpose, Desirability and Scope' and C. Burstall on 'The American Scene', and technical papers such as H. Giesen's 'Measuring Change in Longitudinal Studies and the Establishment of Confidence Intervals', 'Multiple Matrix Sampling' by A. N. James, 'The Rasch Model – An Operational Item Bank' by A. S. Willmott, and H. Scheiblechner's 'Some Elementary Considerations on Cross-Cultural Comparisons of School Achievement'. Policy considerations were dealt with in B. Rodmell's paper on 'The Probable Policy Effects of Monitoring Educational Performance'.

Strictly speaking, these and other papers are not printed as delivered. They have been amended in the light of discussion during the course of the workshop.

Prominent among the major themes discussed were 'pedagogical freedom versus accuracy of assessment' (Dr Westphal's title), and the relationship between assessment and curriculum backwash.

The three major areas for debate were:

(i) the implications of monitoring for policy makers and practitioners;

(ii) the influence of monitoring on teacher-pupil relations; and

(iii) what information to gather and how it should be used.

The members of the workshop discussing implications saw the need to make explicit what the implications of monitoring standards might be. Who is responsible for good education and who takes decisions? Is monitoring concerned with the goals of education or the goals of educational systems. What are the relations between the structures of law and the structures of assessment? How should assessors react to demands from the administration?

The discussions of teacher-pupil relations raised such issues as teacher-pupil variables, pupils' goals, and the need to relate them to the goals of the researcher in the teacher learning and test situation and the all-important one of rendering research data to a form useful for teachers and 'the public'.

On 'what information to gather and its use', the workshop studied the range of information other than about attainment that should be collected, the various circumstances that might warrant the withholding of information from the public, whether or not to take into account a whole range of imput measures, and the dangers of placing excessive emphasis on the literacy, mathematical and scientific areas of attainment in relation to the

aesthetic, moral and physical ones. Coupled with this was the question of whether human rights are violated by assessment and whether ends justify means.

The whole volume represents an extremely valuable collection of papers in this new and important field. It should be widely studied by all concerned with national standards of attainment in schools.

It is a pity that the concluding remarks are so brief and that there is no index. Most of the papers conclude with individual bibliographies – a comprehensive one amongst the appendices would not have come amiss. These, however, are small criticisms compared with the major achievement of producing a timely volume of this kind upon so topical an issue.

D. T. E. MARJORAM

Language and reading among underachievers: a practical review of research
Caroline and David Moseley
NFER £3·25 paperback

The advance publicity talks of this book's presenting 'academic and statistical material . . . in a notably non-academic way'. Two hundred and forty-seven notes, however, and eleven pages of references resemble attempts to create a tone notably academic to stand beside such unexplained statements as:

'Chomsky, an American linguist, has spilled a good deal of bile on colleagues who attempt explicitly to teach children how to use their mother tongue'.

Copious reference, too, adds illusory support to charges against the 'low priority' given by the National Association for the Teaching of English to 'the teaching of generally accepted rules of communication' or against NATE's constant 'stressing the importance of self-expression rather than communication'. In reality, such charges are hard to justify.

It is, perhaps, the desire to compress that has led the authors to write of '18 hours of unstimulating surroundings every day' for some children; inexplicably to contrast 'authoritarian' and 'more radical' teachers; to regret those who 'take over a family market stall' and 'are unlikely to try and do any better'; to assert that 'the school librarian . . . is probably the most powerful figure in most children's language development'.

When the authors' tighter practical concerns take precedence, they have valuable warnings on the dangerous misuse of research by 'political publicists'. They have some usefully simple things to say to teachers and administrators about expectation, language assessment, provision, and the wiser use of resources. It is a pity, then, that the weight of footnotes and some glib compression are almost as off-putting as the basic cost of this very slim volume.

T. DICKINSON

What society does to girls
Joyce Nicholson
Virago £1·95 paperback

Calling all girls (if indeed it is still legal to do so) to join the feminist movement! This seems to be the prime objective of Joyce Nicholson's book, repeating in personal and sometimes moving terms, the arguments we now know so well about the injustices inflicted by social conditioning on little girls.

The chapter devoted to education has little new to say, and underlines the difficulty in changing attitudes within education against the often unconscious prejudices in society as a whole. The author's parents, she tells us, were as apathetic about her wish to stay on at school as, she believes, were her teachers. They encouraged her brother in his homework, while urging her to join them in a game of bridge.

The serious points she makes, about textbooks' stereotypes, and traditional subject provision by sex, are none the less important for being already well known. She suggests few remedies, perhaps wisely, for reknitting the fabric of society is not a task to be undertaken lightly lest our last state should be worse than the first. The sociologist Derek Hanson has reminded us that, 'By treating all children as equals, the school perpetuates inequalities'. Therein is food for thought for all feminists.

PAULINE PERRY

Focus on teachers' centres
Christopher Redknap
NFER £3·95 paperback

Surprisingly little documentation exists about the teachers' centre movement in this country. Even less to be found is any overall theoretical framework within which their growth may be explained or their function within the system assessed. Christopher Redknap's book boldly attempts all three tasks; to document, explain and assess the phenomenon of teachers centres in the 1960s and '70s.

The documentation is adequate, and in

some instances historically fascinating. There can be few who know that before 1900 there was a network provision of pupil teacher centres for the provision of courses and library support, to help pupil teachers to receive better training than many headteachers were able or willing to give. The last of these centres, at Watford, did not close until 1939.

Documentation of the present-day activities of teacher centres reveals, predictably, enormous diversity of size and nature, but a perhaps less predictable consistency of function, which seems in the main stream to adhere to the 'practical workshop' nature of activity for teachers. Links with other educational agencies are not noticeable, except perhaps in the links with the school council, and the close but ambivalent relationship with the LEA Advisory Services.

The attempt at theoretical rationale for the teachers' centre development is a brave and interesting exercise. The author argues 'in a centralized system the transmission of official policy through mass lectures may be appropriate, whereas in a decentralized system the search for local solutions to problems may more easily be found in practical workshop sessions'. This is a seductive argument of the kind the British instinctively embrace. I am personally doubtful whether it is a rationale that would bear investigation in the light of other countries' use of teachers centres (as the author's Norwegian examples illustrate), nor indeed in the light of the use made by some English local authorities of their centres.

Attempts at assessment are scattered throughout the book, but are disappointingly lacking in any clear view of what should be the criteria for judgment. Final chapters give accounts of teachers' centres in the USA, Norway and, interestingly, in Kenya.

Overall, the book contributes a picture of pragmatic response rather than policy development, of mechanisms better geared to responding to immediate bread and butter needs than to the wider sweeps of educational change. Perhaps this is the strength, as it is also sometimes the weakness, of the teachers' centre movement.

PAULINE PERRY

Educational assessment

Karlheinz Ingenkamp

NFER for the Council of Europe Committee for Educational Research, £4·95 paperback

This book contains, in commendably brief and readable form, a great deal of useful comment and review of a wide range of research and development work in the field of educational assessment. The extensive bibliography provides a good basis for further study. At a time when there is increased interest in this country in the assessment of the inputs, processes and outcomes of education, it is important to have a clear statement of the uses and limitations of different types of test and to put testing in the wider context of assessment. While the book does this with some skill, it is necessarily limited by its concentration on the European scene since, although reference is made to studies in the United States, it has made no comment on the work of the National Assessment of Educational Progress which began in the '60s and continues to provide an important context for assessment in Europe and particularly for the work of the Assessment of Performance Unit and the Educational Disadvantage Unit, both of which were announced in 1974 and have been set up by the Department of Education and Science.

Research into educational assessment is expanding rapidly, and as this book was written in 1974 it will be valuable to have an early second edition.

C. H. SELBY

Education welfare: strategy and structure

Keith MacMillan

Longman £2·50 paperback

This book sets out to examine the education welfare service and, at a time when the traditional role of the education welfare officer is being questioned, to suggest a strategy for the future. The author has taught in primary and secondary schools and in colleges of education, and is at present Director of Studies at the Administrative Staff College, Henley-on-Thames and Brunel University.

The book is in four parts. First the recent history of the service is traced, particularly in relation to the Plowden and Seebohm reports. The author concluded that because of incompleteness of information neither of these reports could be regarded as satisfactory bases for the analysis he sought to carry out. Two special studies were therefore made. In 1970 details of the organization of the service were sought by means of a questionnaire addressed to 247 LEAs, 187 of whom responded; and to illuminate the more qualitative aspects of the work of the service a

number of case studies were examined. Parts 2 and 3 present the results of these two surveys.

In his final section the author gives his views on the future role of the service. He points out that because of the universality of the education service, education welfare cannot operate on the same basis of selectivity in accepting cases as social services departments. He concludes that the present role of education welfare is firmly founded within the education service, and points out that 'if present EWOs were to become "professional social workers" there is a danger that the more wide-ranging, preventive and information-and-discovery aspects of the role would be lost.'

The author suggests that the future role of the service should be co-ordinating information about pupils and their families, identifying those in need of help from specialist social agencies, and carrying out preventive work.

The sections on the structure of the service, which must of course include the career structure for EWOs, and on training, are the least satisfying in the book, perhaps because of their brevity. In particular one would have liked to see a fuller development of the suggestion that a new kind of vocational course should be provided for new entrants, all of whom would be graduates.

The book will be of special value both in the training of EWOs and as a contribution to the development of the service. The maintenance throughout of an educational viewpoint will be welcomed by all who believe in the importance for children of regular attendance at school, and the author is to be congratulated on the lucidity and perceptiveness with which he approaches this sensitive subject.

CHRISTOPHER A. NORMAN

Mathematics: Friend or Foe?

Dorothy Evans

George Allen & Unwin £5·50 hardback, £2·50 paperback

In this book, which has been written for students of education and teachers, the author discusses in three separate sections the 'why', 'what', and 'how' of teaching mathematics in primary schools. The first section describes and comments on various views held by teachers of the aims of teaching mathematics, and these range from the achievement of numerical competence, through the memorizing of mathematical techniques, the development of logical thinking, and the study of the applications of the subject, to an appreciation of its form and beauty. Each standpoint is illustrated with examples drawn from classroom work and, while the majority of these are apposite, a few go beyond the range of work normally tackled in the primary school. It is the author's belief that teachers should 'encourage children to identify problems in their own sphere and help them to develop strategies which they are likely to be able to use in any situation.' But Miss Evans realises the need to support this by providing children with appropriate knowledge and skills: 'it is necessary that children begin to acquire a "tool box", but it is equally necessary that the tools from the box are well understood.'

The second section compares nine schemes of work which include some developed by national bodies, two well-known series of textbooks, and locally produced guidelines. Common features are drawn out and particular treatments described. Comments are made not only on the content, but also on the vocabulary introduced, the symbols used, and the recommended methods of setting down written work.

The final section describes and suggests reasons for the changes which have taken place in teacher-pupil relations, in the range of work tackled, and in the use of resources. Helpful comments are made on the use of textbooks, workcards, structural apparatus and equipment, and sensible and practical advice given on such matters as classroom organization, assessment, testing, and recording children's progress. A bibliography and index are provided.

The author gives guarded approval to the changes and sees the major advantage to be that 'children are not merely thought of as bottles to be filled but also as candles to be lit.' A plea is made that this can only be achieved if teachers plan for it. By clearly setting down several possible approaches and commenting on their relative merits, this book will help teachers determine what mathematics they wish to teach, how they wish to teach it, and why they are so doing.

A. ASHBROOK

Models of history teaching in the secondary school

Brian Garvey and Mary Krug

Oxford £2·50 paperback

This book is expressly written for 'future

teachers of history in secondary schools', but it has much to offer to experienced teachers and to those who teach history in middle schools. It covers a wide range of teaching techniques, and each chapter is sufficiently compact and practical for its perusal to be a profitable use of time even for the hard-pressed teacher. The approach is refreshing; the introduction of each teaching strategy through a case study from an actual lesson is effective in focusing the reader's attention on the implications of the different approaches for pupils' learning.

The chapter on the use of pictures is particularly helpful, but that dealing with drama takes no account of the important work of John Fines. While there is little emphasis on museum visits and field work, the writers make the often neglected point: 'if pupils are to learn history by "doing" it then the teacher must keep himself professionally fit by "doing" it too.'

There is a helpful section on assessment, which gives due emphasis to its diagnostic function and offers sound, practical advice on how to avoid some of the pitfalls of examination setting.

A brief chapter makes helpful suggestions on syllabus content, but little space is given to the special problems of teaching history within a humanities course.

The only danger of this book is that teachers may come to believe that the study of history can be as neat and orderly as the authors' analysis of the objectives of teaching history, whereas some of these can only ever emerge in the context of a particular lesson.

A. D. J. TURNER

The child from five to ten (revised edition)
Arnold Gesell, Frances L. Ilg and Louise Bates Ames
Harper & Row £7·95

Spontaneous play in early childhood from birth to six years
Mary D. Sheridan
NFER £2·50 paperback

The second edition of *The Child from Five to Ten*, written thirty years after the appearance of the first edition, will prove a valuable source to those concerned with the welfare of children. The structure and presentation with cross-sectional age summaries makes this a reference book for students and those professionally engaged in the development of children; lay people might find the book complex, and the data overwhelming. The findings are well based upon investigational and observational techniques, but the British reader might question some of the norms in relation to the children of this country: the earlier exposure to larger groups and to different adults encountered by many children receiving pre-school education, and an earlier start to compulsory schooling might have an accelerating effect upon some areas of development. However, as the authors state, the purpose of this book is not to set up rigid norms, but to impart a sense of growth trends; this it achieves admirably.

The second book, *Spontaneous Play in Early Childhood from Birth to Six Years* is a much less daunting though no less professional or soundly based volume. Teachers and others concerned with the early years of childhood need 'knowledge of the nature and range of normal development', in order to identify and cater for those children whose development is at variance with the norm; a study of Dr Sheridan's work in this and in her earlier book *Children's Developmental Progress*, *Spontaneous Play* would form a firm base for this knowledge. Parents could relate with ease the behaviour of their own children to that evidenced in this volume.

The format makes for interesting reading, the illustrations (line drawings from photographs), and the plainly worded text present a difficult subject in a deceptively simple way. The importance of the four essential provisions for play, listed in the book, playthings, playspace, playtime and playmates, and the children's reactions to these, illustrate all the developmental stages noted by the author, and would serve as a useful guide to those concerned with providing equipment and experiences for young children.

The final chapters on variously handicapped children, the simple provision which can be made to aid their development, and the care and sensitivity needed in helping these children, shows the width and range of this study. Dr Sheridan's extensive experience of early childhood development is evident throughout.

BRENDA STANILAND

Reorganizing education: management and participation for change
Edmund J. King (editor)
Sage £9·00 hardback, £4·95 paperback

This book is the first of a series of yearbooks devoted to the 'review of social and educational change' to be produced by Sage

Publications. To quote from the publisher's policy statement: they are intended 'to provide an international forum to examine key developments and consequential questions from the standpoints of several social disciplines, and to point indicators for policy formation and research'.

The fifteen contributions to Volume 1 deal with important aspects of 'management and participation for change' in the process of educational reorganization. So much talk of the experts, says the editor, has been 'not of education but of systems of schooling', and it is quite clear that, in discussing the importance of progressing from existing structures, each of the authors pays particular attention to the practical possibilities of encouraging full and informed participation of all members of the community as well as those who are directly and professionally involved with the education process.

The influence of outside sources, the family, the existence of formal qualifications, the consequential occupational hierarchies and the frequently conflicting views from the industrial-commercial sectors are given consideration; each of them has an important bearing on the current discussions of the relationship between education in school and preparation for work.

The author of the article on curricular reform is bold enough to suggest five 'public traditions' that should form part of the whole curriculum, and the author of the article on curricular transaction draws attention to the interpretation of curricular material in relation to 'technology' – a subject that will inevitably be the concern of each and every individual living in our technological society.

The book emphasizes the need for positive guidance in curricular matters with an openness in participation in planning at national level; the means to achieve this – 'without involving an authoritarianism incompatible with liberal democracy' – could possibly require the revival of the Central Advisory Council or the establishment of an Educational Policy Council.

The theme developed by each of the individual contributors from their experiences in their different countries is the inevitability of change and the urgency of the need for guidance based on central principles – principles formed in real participatory processes. Ill-considered change that responds too closely to immediate demands of the day could lead, as it did in the past, to schemes for 'standardization and supply of educational parts and personnel within increasingly defined categories and for increasingly specific objectives'.

The book should surely be compulsory reading for those concerned, locally and nationally, with the preparation of consultative documents on educational reform and school or college curricula.

G. W. MILBURN

Middle start: an experiment in the educational enrichment of young adolescents

J. M. Yinger, K. Ikeda, F. Laycock and S. T. Cutler

Cambridge £7·50 hardback, £2·95 paperback

Whatever the effects of attempts to reduce educational disadvantage by specialized early intervention, difficulties persist for some children throughout their childhood, and the problem of improving the educational performance and motivation of young adolescents from economically disadvantaged backgrounds is a worrying one in many countries.

This book records an experiment with 13-year-old young people, funded by the US Department of Health, Education, and Welfare. In each year an experimental group of sixty-five city children and a control group of the same number were constituted, matched in pairs for ethnicity, sex, class in school, school district (and usually school also), father's place in household, academic and intelligence measures. The selection was then randomized. Children were chosen who showed some promise of academic success but who came from economically deprived neighbourhoods and schools: the authors did not believe that their experimental stimulus would be strong enough or persist long enough to overcome extreme academic disadvantage. The aim was to see whether the measures taken could overcome the expected sequence of events. In considering the implications of the study, it is important that these qualifications should be borne in mind.

In each of the three years about twenty teachers and counsellors provided a six weeks residential programme for the young people in the experimental groups in what is described as an intensive but pleasant summer on a college campus. The staff sought to develop not only academic interests and skills, but also broader aspects such as aesthetics, physical activities, hobbies, personal and social sensitivity. Close personal ties were developed, not only with teachers and counsellors, but also

with a college student who worked and lived with each group of the children. The keynote of the whole programme was that staff expectations of the children were high, and it is clear that a great deal of effort and enthusiasm went into the venture. The six-week course for each group was followed up by long-term counselling, newsletters, reunions, supplemental academic work, and conferences with parents, all of which extended over several years.

The follow-up was carefully done and the analysis took account of the quality of the match between each pair. The results of the programme were assessed in terms of six indicators, which included persistence in school, grades in junior and senior high schools, and attendance at academic or other specialized schools. On all six measures the performance of the experimental pupils was judged to be superior to that of their matched control partners, and on four of these measures the superiority was statistically significant. The authors feel that the most impressive lesson in the success of their programme is appreciation of the importance of paying attention to each new experience, each new challenge, if a child is going to learn to cope effectively with school. They regard it as of great importance that the initial programme shall be followed up afterwards and point to the need for the counselling of students to help them to put their new motivation into action. The danger is that any one adverse experience 'can break the continuity, bringing back a sense of defeat, of hostility, of isolation, feelings that can weaken or even crush the desire to continue'. Although the emphasis on statistical method may daunt some general readers, the book is of considerable significance for teachers and others working with adolescents, including those from ethnic minority groups. The three ingredients for success which the authors regard as essential in any programme appear to apply equally to long- and short-term measures. They are, first, an exciting, new, stretching experience which breaks the connexion between school and failure, school and discrimination, school and boredom; second, a sponsor to show that new possibilities are available and to explain each step along the way; and, third, a circle of 'supporting others' – parents, family friends, and adults in the community. And although this experiment did not involve the most disadvantaged children of all, nevertheless there are some lessons to be learned for work with this group not only in education but, for example, in the development of 'intermediate treatment' for young offenders or those who are at risk of becoming delinquent.

CHRISTOPHER A. NORMAN

Experiments in sound

Gertrud Meyer-Benkmann

Universal Edition £3·50 paperback

Writers on music education since the mid-sixties have been much preoccupied with two recurring themes. The first emphasizes the need for children and their teachers to have regular and effective involvement in the music of their own time; the second is concerned with the desirability of their being given adequate opportunities in music to work with the raw materials of the art with something like the same freedom that they experience in other aesthetic pursuits.

Dr Meyer-Benkmann obviously subscribes to both these propositions. She envisages children being nurtured on a musical diet that embraces the traditional, the contemporary and the non-European. In an ideal society 'instead of having poor quality "educational music" drilled into him, the child is encouraged to make music of his own'. Expression through music has a 'liberating' effect, affording an opportunity to 'release pressures and aggressions resulting from the environment'. She advocates freedom and lack of structure in music making if the child is 'to achieve an expression of his personality and of his experience of the world around him'.

Much of the book is concerned with the implementation of these principles; various creative activities involving voices, instruments and movement are described. Systems of notation, visual representations of sound and ways of encouraging perceptive listening are discussed; detailed examples of experimental projects entailing a wide range of sound patterning are supplied.

Although the author is at pains to deny the need for obtrusive structure in music education, some of the projects described do seem to rely excessively upon the intervention of the teacher. It is not always clear for which age groups the projects are intended and there are even hints that girls predominate in the classes. No doubt the experimental work described is more typical of the German Musikschule than the British primary school. Nevertheless, this is an enterprising book abounding with original ideas. Although

rather highly priced for a paperback, it is attractively produced and a useful addition to the Universal series.

PAT SALISBURY

The social significance of middle schools
W. A. L. Blyth and R. Derricott
Batsford £6·95 hardback, £3·75 paperback

We are told in the introduction that this book has been written to draw attention to the social significance of middle schools, to their nature as social organizations and to the influences they exercise on children and adults. In fact the authors spend the greater part of the book in a review of the advent and development of middle schools, and they leave their interesting speculative and theoretical interpretation of the how and why of middle schools until the final chapter. The book as a whole is, however, a welcome addition to the published literature and is valuable not least for the detailed chapter notes and comprehensive bibliography.

The authors make it clear that the book is not based on extensive or sophisticated research and they say, with some honesty, that they gathered their material by reading about middle schools, by visiting a number of representative establishments, by talking with a wide range of people involved in middle schools and by drawing on their own experience with the Schools Council Project on History, Geography and Social Science 8–13. Nevertheless, their account of the development of middle schools, their comment on the rationalization of economic considerations and educational arguments and their fuller consideration of organizational patterns, curriculum development and innovation, roles and relationships appears well founded and perceptive.

The final chapter holds the key to the book's title; it is here that the authors take the theory that change is the basic social reality and suggest middle schools are the product of conflict. To illustrate their argument they take a metaphor from geophysics and use the example of rock movement beneath the earth's surface to symbolize the slow but continuous process of social change. In applying the metaphor to educational organizations, middle schools are seen as arising from a head-on clash between two major trends – 'primarily from pressures and tensions along the interface between primary and secondary education'.

The authors hasten to say, however, that middle schools appear to be such palpably relaxed and amiable places that the notion of conflict theory may appear incompatible with their basic character. They go on to suggest that middle schools have become accustomed to the management and resolution of conflict and this, they say, is the strength which gives them their developments in curriculum, in organization, in democratic staff processes, their responsiveness to society's needs and above all their characteristic social climate and their concern for individual development.

The Social Significance of Middle Schools is an interesting and readable book. It is aimed at a wide audience and for this it may be criticized. Nevertheless it should certainly find favour with those who teach, or are preparing to teach, in middle schools if only for the coherent way in which it charts the emergence of English middle schools and describes the various aspects of their development. Many questions are left unanswered, some deliberately so, since in the introduction the authors indicate that their work might well suggest perspectives and possibilities for others to pursue and also act as a springboard for further research and investigation.

C. R. GILLINGS

Curriculum planning: a new approach (second edition)
Glen Hass
Allyn & Bacon £7·25 hardback

The curriculum: theory and practice
A. V. Kelly
Harper & Row £4·95 hardback, £2·75 paperback

The curriculum presumably ends up in children doing things, or having things happen to them, as a result of the actions of their teachers. Both these books set out to enable teachers to come to better decisions about these very important matters.

Professor Hass has produced a work book for a highly structured course of study. Each of its sections forms a unit of work, with an introduction which sets out the rationale for the section, and a series of objectives, pre- and post-assessment tasks, related to a collection of readings that helps to define the concerns of the section. These readings are selected to present 'competing or special perspectives'. The section ends with a list of films, books and articles of a more general nature.

He has assembled a distinguished list of

contributors and, despite the variable quality of the readings, this reader is left with sheer admiration for the effort and care which has gone into the compilation of the work. The readings are almost wholly American in origin, and are particularly relevant to the problems confronting American schools, but their applicability to our own condition is strikingly obvious and there is progression throughout; assessment tasks are graded for different levels of experience and professional need. The merit of the book is the way it makes a wide range of materials and a complex background of information accessible to teachers who want to come to terms with the theoretical demands of the increasingly complicated process of planning the curriculum. Unfortunately so much of the material is not readily available to English teachers but the book could be a model for course planners.

A. V. Kelly is equally concerned to give an overview of the different theories of the curriculum, though he tends to do this by short references to the ideas of the major theorists, writers and researchers, and one is left to wonder whether those who are as conversant with the works as this assumes really need to read the book. He is uncompromising in his belief in the centrality of the teacher's role in curriculum planning and hits out broadly at what he considers to be present tendencies towards interventionism in the curriculum. In the last chapter he enters the 'great debate' with all guns firing. He does, however, like to set up the arguments for and against in his own terms and might like to reflect upon his own advice to those who, perhaps, do the same kind of violence to his own particular interest – 'curriculum integration': 'There is little in educational theory that can profit from the adoption of polarized stances of this kind. In most cases we should not be being invited to choose between one extreme or another but rather to find a balance between them.' But, this is a useful book and adds to that gradual accumulation of references which teacher centre libraries are building up, and from which, eventually, we may hope the answers are going to emerge.

E. A. Bassett

Talking, writing and learning 8–13
Margaret Mallett and Bernard Newsome
Evans/Methuen Educational £3·55 paperback
Schools Council Working Paper 59 has been a long time in the making. Following upon the primary and the secondary language projects, this address to teachers on priorities in a language programme for pupils in the middle years of schooling reflects the by now expected commitment to a viewpoint determined by that emphasis on language-function characterizing most of the Britton-inspired Schools Council work on language development.

Written as a report, more than half of the volume is taken up by accounts of twelve 'contexts', i.e. observed methods of working by pupils within a framework of different teaching approaches. What then follows, before the second major part of the book, is an extremely brief (7-page) chapter which describes a science lesson in order to illustrate Vygotsky's distinction between *scientific* and *spontaneous* concepts. In the second part, great emphasis is laid upon the value of talking as an exploratory heuristic instrument. The authors leave us in no doubt about this '. . . our talk is first and foremost to work things out for ourselves: the sharing of insights comes second'. Then comes writing and lastly a chapter on implications for the curriculum ending with an account of patterns of language work in six different schools—primary, middle and secondary.

There is a great deal of empirical interest in the report and some fascinating children's writing. Glosses on the pieces quoted and their contexts are frequently sensitive, and well-balanced and should lead a good many teachers to reassess their objectives and methods of work. Indeed, teachers generally will certainly welcome the wealth of evidence from practice; they *may* welcome the theoretical categorizations (transactional-expressive-poetic, etc); I find unsatisfactory the unproven, not to say unattestable, relations between the data and the theory. But this is not a theoretical work. We still await the kind of book in which valuable data can be constructively examined on a powerful and consistent theoretical base. Language in relation to learning is an immensely complex area and this book is to be welcomed as an addition to the corpus of insights we nonetheless do possess, although its chief virtue is likely to be inspirational rather than analytical.

Peter Gannon

Education of exceptional learners
Frank M. Hewett with Steven R. Forness
Allyn & Bacon £12·85 hardback

This book breaks away from the tradition of designing programmes appropriate to specific handicaps and aims at a collective approach where exceptional children are considered as learners with a recognition that there are similarities as well as differences existing among the categories.

In Part I a historical sketch and a description of several categories of exceptional learners are used to demonstrate that the level of functioning at any time is determined by the interaction between capacity and experience. Twelve conditions are then identified and discussed under the headings of definition and classification; incidence; causes; identification and diagnosis; treatment and educational provisions.

Four psychosocial dimensions are described in Part II. Flexibility is seen as the ability of children to accommodate to their environment; sensory impairments may distort perceptions and other adverse effects accrue from inappropriate or negative experiences. Sociality relates to the degree to which interaction with others impedes or assists the attainment of such social goals as independence. When discussing intelligence the author draws our attention away from the controversies and the concepts of 'deficit' and 'inferiority' towards the creation of an environment which encourages an improvement in the level of functioning. Individuality is defined as the result of differences in capacity, in motivation and in opportunity.

These four threads are skilfully woven into the discussion in Part III of learning dimensions. Special education is only special if we succeed in identifying and implementing a curriculum in conditions appropriate to the individual learner. Various criteria and techniques are discussed aimed to promote success in such avenues as motoric response, visual and auditory perception, communication skills, and so on.

Finally, in Part IV the contemporary issue of mainstreaming or integration is given an airing, with reference to some current programmes in the USA. The effects on the child on his peers, parents and teachers are discussed and the not-surprising conclusion eventually drawn that mainstreaming guarantees neither success nor failure, but that it does extend the range of options available for providing better education for exceptional learners.

All the topics in this rather long book are dealt with thoroughly. Perhaps to the experienced teacher Part I may mean tedious reading but it does provide a background text on special education which should prove invaluable to the student or beginning teacher.

The rest of the book is much more interesting and should prove to be a useful addition to the bookshelf of anyone attempting to understand the exceptional learner and providing an appropriate educational programme and environment.

O. HARRISON

REVIEWS IN BRIEF

Archaeology for schools
The Council for British Archaeology has produced an archaeology folder for schools. In addition to copies of the Bulletin of Archaeology for Schools, the folder contains a booklist, a film list, and a statement of aims. Details from Mike Corbishley, Education Officer, Council for British Archaeology, 112 Kennington Road, London SE11 6RE (telephone no. 01–582 0494).

History teachers' yearbook 1977
P. J. Harris (editor)
Historical Association £1·20 paperback (£1·80 to non-members of the Association)

History at the universities, polytechnics and colleges (fifth edition 1977)
R. P. Blows (editor)
Historical Association £1·60 paperback (£2·40 to non-members of the Association)

A second edition of the *History Teachers' Yearbook* has now been published. The old edition has been expanded and improved, and details subsequent developments appear in the new one.

History at the Universities, Polytechnics and Colleges is described by the Association as 'a comparative and analytical guide to degree courses in history in the United Kingdom'. It is, as one would imagine, very comprehensive indeed.

ADDITIONAL BOOKS RECEIVED

ASTON, OLIVER. *Finds fabrics*. Evans, £0·85.
ASTON, OLIVER. *Finds rubbish*. Evans, £0·85.

ATKIN, KEITH J. *Basic computer science.* Macdonald & Evans, £1·50.

BACKHOUSE, JOHN K. *Comparability of grading standards in science subjects at GCE A level.* (Schools Council Examinations Bulletin 39.) Evans/Methuen Educational, £2·50.

BAIRD, LEONARD L. *The élite schools.* (Lexington, £10·50.

BOLGER, A. W. (editor). *Training in counselling: a directory.* British Association for Counselling, £0·70.

CARNEGIE COUNCIL. *The states and private higher education.* A report of the Carnegie Council on Policy Studies in Higher Education. Jossey-Bass, £7·50.

CIPOLLA, CARLO M. *The economic history of world population.* Penguin, £0·75.

COHEN, LESLIE and R. N. DEALE. *Assessment by teachers in examinations at 16+.* (Schools Council Examinations Bulletin 37.) Evans/Methuen Educational, £3·60.

CRABB, GEOFFREY. *Copyright agreements between employers.* Council for Educational Technology, Free.

CRICK, BERNARD and DEREK HEATER. *Essays on political education.* Falmar Press, £6·50 (£2·85 paperback).

EDWARDS, MIKE. *Finds plants.* Evans, £0·85.

FOSTER, RUTH. *Knowing in my bones.* A. & C. Black, £2·50 (£1·50 paperback).

HAMILTON, DAVID. *In search of structure: a case-study of a new Scottish open-plan primary school.* Hodder & Stoughton,£3·50.

HAMLYN, D. W. *Experience and the growth of understanding.* Routledge & Kegan Paul, £6·50.

HILSUM, S. and C. STRONG. *The secondary teachers' day.* NFER, £7·70.

HUMPHREYS, JOHN (editor). *A directory of voluntary counselling and allied services* (third edition). British Association for Counselling, £1·75 (available from 26 Bedford Square, London WC1B 3HU).

IBBERSON, MARY. *For joy that we are here: rural music schools* 1929–1950. Bedford Square Press, £2·75 (£3·05 by post).

KLOSKOWSKA, ANTONINA and GUIDO MARTINOTTI (editors). *Education in a changing society.* SAGE Publications, £8·00 (£3·95 paperback).

KNAPP, B. *Skill in sport: the attainment of proficiency.* Routledge & Kegan Paul, £2·25.

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Printed in Scotland by Her Majesty's Stationery Office at HMSO Press, Edinburgh
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